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ECONOMICS

NEW NCERT COMPILATION

6th - 9th STD

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NCERT has not yet released Volume 2 for Class 9 - the compilation will be updated immediately once it is published.

The Value of Work

When you are doing any work, do not think of anything beyond. Do it as worship, as the highest worship, and devote your whole life to it for the time being.

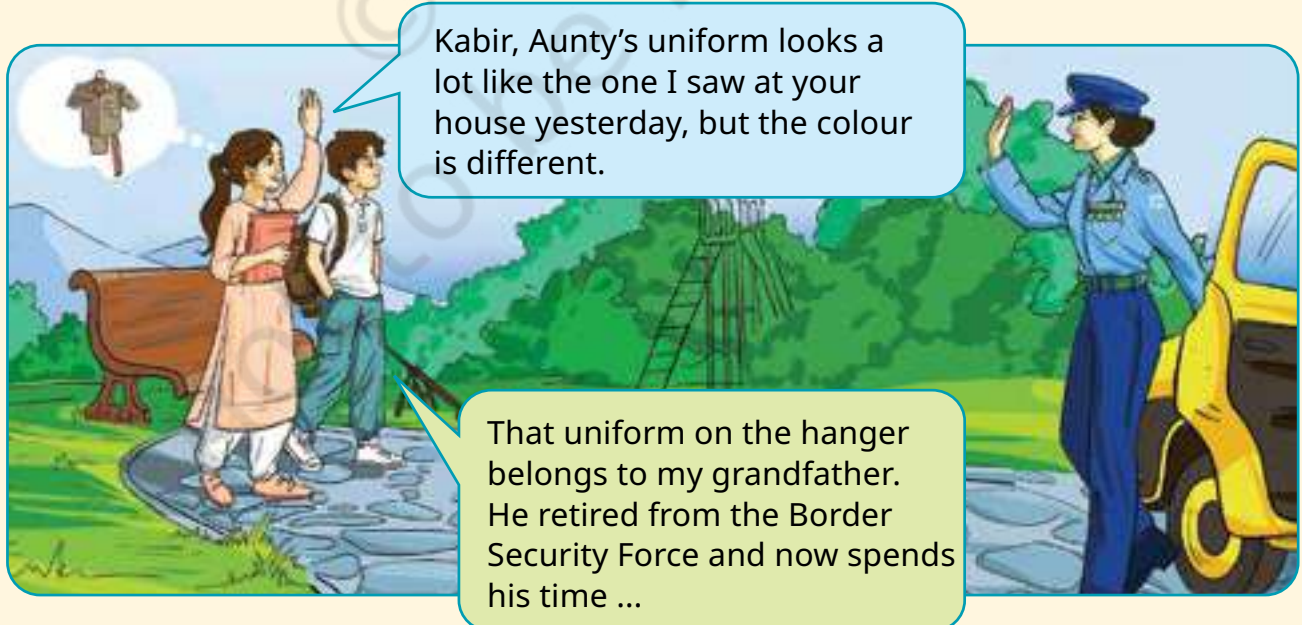
— Swami Vivekananda

The Big Questions ?

1. What are the different types of activities that people engage in?
2. What is their contribution to our everyday lives?



Anu and Kabir were playing in the park when they saw their neighbour, Geeta Aunty, getting out of a taxi. She was returning home from work and was in her uniform. A pilot in the Indian Air Force, she is the pride of the whole town.





... providing free Geography classes to the neighbourhood kids ...



... tending to our vegetable garden, and ...



... running errands for the home.



My parents run a shop that sells uniforms and other ready-made garments. Appa leaves early in the morning and Maa joins him in the shop after we leave for school.



Maa is usually back by the time we return home from school. She also contributes to a voluntary group that teaches stitching to the women in the community.



Do you remember my elder brother Rohan? You met him when he came to pick me up from school. He is a software engineer and works in a company that makes computer applications. On the weekends he volunteers to teach computer skills to those who have joined the youth development programme of the nearby college.



Wow, Anu, everyone around us does so many things every day!

LET'S EXPLORE

What activities did the people in Anu's and Kabir's story engage in? Mention them in the table given below:



Character in the story	Activities they are engaged in	

Different types of activities, like the ones discussed above, are divided into two groups or categories: *economic activities* and *non-economic activities*.

Economic activities are those that involve money or are performed in exchange for money or **money's worth** for the parties involved. For example, a business person selling school bags in the **market**, a farmer selling produce in the market, a lawyer arguing a case and earning a **fee**, a truck driver transporting goods from one place to another, workers employed in a car manufacturing factory, etc.

Money's worth: The monetary value that a person places on an object based on the benefit that they derive from it.

Market: A place where people engage in the exchange of goods and services. People may exchange goods and services for other goods and services but in most markets these are exchanged for money.

Fee: A payment made to a person or organisation in exchange for professional advice or services. For example, a fee paid to a doctor and a lawyer.

Non-economic activities are those that do not generate income or wealth but are done out of feelings like gratitude,

*Left to right, top to bottom:
A business person selling
school bags in the market*

*Farmers selling their
harvest in the market*

A lawyer arguing a case

*A truck driver transporting goods
from one place to another*

*Workers employed in a car
manufacturing factory*



love, care and respect. For instance, parents cooking food for the family or helping their children with schoolwork, youth taking care of the grandparents, family members helping in the renovation of the house, etc.

*Left to right:
Parents cooking food
for the family*

*Mother helping her
children with
schoolwork*





Left to right:

Youth helping the grandparent

Family members helping in the renovation of the house

LET'S EXPLORE

In the table given on page 185, did you notice the third empty column? Label this column 'economic / non-economic activity'. Now classify them according to the nature of activity.

In Anu's and Kabir's story, Geeta Aunty, the Air Force pilot, receives a **salary**. She serves the country and performs an economic activity too. Anu's brother, Rohan, works for a software company and is given a salary for it. Over the weekend, he also volunteers at the youth development programme of the nearby college, where he teaches computer skills to young adults. This is a non-economic activity.

Salary:

A fixed regular payment generally paid monthly by an employer to an employee.



THINK ABOUT IT

- ◆ When Kabir's grandfather voluntarily teaches the neighbourhood kids for free, is that an economic activity or a non-economic activity? How is it different from your teachers teaching you at school? Discuss with your classmates.
- ◆ What are some non-economic activities that are important to you and your family? Why are they valuable?

Types of Economic Activities

Kavya was excited to go to her aunt's house in the village of Kamlapur. On the way, she saw that a highway was being built near the village, and the construction site was abuzz with activity. Large machines, such as excavators and bulldozers, were being operated by dedicated technicians.



This new highway promised to reduce the travel time to the nearest town from five hours to just two hours. Kavya thought that she would be able to visit her aunt more often once the highway was ready, since it would take less time to travel there. Happy with this thought, Kavya ran to greet her aunt and to eat the delicious *jalebis* that she had made. They were joined by Kavya's uncle, who had just returned home from work. He

is a technician in a construction company and operates a bulldozer. He receives a monthly salary for his services.

The next day, Kavya's aunt woke up early to finish her share of the household chores and left for work. She is



employed at the village post office and is paid a monthly salary. In the evening, after her office work, she also conducts online classes to help students prepare for school exams. She charges a weekly fee for these classes.

On the weekend, Kavya visited a local mango orchard with her aunt to have some delicious mangoes.

There she saw Sahil, a farm labourer who was using a tractor to till a farmer's land nearby. He earns a daily **wage** for his efforts. He gets some payment for his work in cash, and the remaining part of the payment in the form of mangoes of equal value. The mangoes that he receives as a part of his work are called **payment in kind**.



Wage:
A payment made by the employer to the worker for a specific period of time.

Payment in kind: A non-cash payment that is received for the work performed.



THINK ABOUT IT

On your way from home to school today, can you recall the various economic activities that people are engaged in? In what ways do you think those people are paid?

As we now understand, economic activities are those that have value in terms of money. Economic activities also add value at each stage of the process of transforming something into another form. This is called value addition.

Let us take the example of Kavya's father, Rajesh, to understand this.



Rajesh is a carpenter who buys wood from a nearby market for ₹600 to make furniture.



He uses special tools and other materials for building the furniture.



Rajesh sells a chair for ₹1,000 each in the market.

The wood for the chair costs ₹600. So, what is the remaining ₹400 ($₹1,000 - ₹600$) for? It is the monetary value of Rajesh's skill, time and effort, which went into making that chair. Rajesh has added value to the wood by turning it into furniture. From buying the wood to selling the chair, these activities involve payment. They are, therefore, a part of economic activities.

LET'S EXPLORE

Put a ✓ against those activities/professions that you think create monetary value. Can you add two activities and examples of money related value creation to the empty rows at the end?



Activity / Profession	Example of money-related value creation
1. Baker	
2. Tailor	
3. Farmers repairing their tractor	
4. Doctor	
5. Parents cooking dinner for their family	
6. Scientist	
7. Person taking care of a sick grandparent	
8.	
9.	

The Importance of Non-Economic Activities

While non-economic activities may not involve money, the value they generate is important in our lives.

Sevā: selfless service

We see *sevā* in many places such as temples, gurudwaras, mosques and churches. For instance, *langars* or community kitchens at gurudwaras serve food to every visitor for free. These practices foster a sense of satisfaction and gratitude

for what we have, and they are also a way of contributing to society without expecting anything in return.



Temple distributing prasād to devotees



Langar at the Golden Temple



Swachh Bharat Abhiyan

The strength of community participation

The Swachh Bharat Abhiyan is based on the collective efforts of all Indian citizens to keep our surroundings clean. Individually, we keep our homes and surroundings clean. People have also come together to clean up streets, roads, parks and other public places or community areas. Together, these efforts lead to a clean home, neighbourhood, society and nation.

Another example of collective community participation is the celebration of Van Mahotsav (the festival of forests) in India to promote awareness about the value of trees and the conservation



Van Mahotsav

of forests. The initiative brings together members of the community for tree plantation drives.



THINK ABOUT IT

- ❖ Many communities in India have similar practices that involve community participation. Can you identify a few from your area?
- ❖ We celebrate many festivals in India. During these festivals, people gather to organise all the various activities. They decorate the place together and share the food that they cook. Are these non-economic activities? Why do you think they still hold value?
- ❖ Can you identify community programmes that have been undertaken by your school or in your locality? What did you observe during these programmes?

Before we move on...

- In this chapter, we learnt about economic and non-economic activities.
- We also learnt about the value addition that economic activities create.
- We understood how non-economic activities contribute to social welfare, personal wellbeing and enhance the overall quality of life.



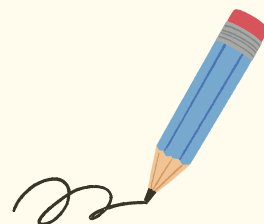
Questions, activities and projects

1. How are economic activities different from non-economic activities?
2. What kind of economic activities do people engage in? Illustrate with examples.
3. There is great value attached to people who are engaged in community service activities. Comment on this statement.
4. What are the various ways in which people are compensated for various economic activities? Give some examples.

Noodles

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*'Noodles' is our abbreviation for 'Notes and Doodles'!



Economic Activities Around Us

CHAPTER 14

The root of prosperity is economic activity, the lack of it brings material distress. The absence of fruitful economic activity endangers both current prosperity and future growth.

— Kaṭilya's Arthaśhāstra

The Big Questions ?

1. How are economic activities classified?
2. What differentiates these activities to be grouped into sectors?
3. How are the three sectors interconnected?



Introduction

In Chapter 13, we learnt about two types of activities – economic and non-economic. Activities that create **monetary value** are called economic activities. We also learnt about the importance of non-economic activities. To understand these activities better we will learn how economic activities are classified and what differentiates them in this chapter.

Monetary value: Value of something that can be measured in terms of money.



Economic Sectors:
Broad groups that include various activities that help with the economic prosperity of a nation.

Over the decades, the number of economic activities has increased tremendously. For example, earlier most people were involved in activities such as agriculture, livestock rearing, production of tools, pottery and weaving cloth. As societies progressed, the number of economic activities through which people earn their livelihoods increased vastly.

Today, there are diverse economic activities such as manufacturing computers, mobile phones and drones; working in banks, schools and hotels; driving various types of vehicles for transportation; making furniture; tailoring clothes using machines; creating software; repairing refrigerators and washing machines; etc. Classifying all these activities helps us to understand how they function and the links they have with each other.

The Classification of Economic Activities into Economic Sectors

Some economic activities share similar characteristics and based on this, they can be grouped together or classified into broader groups called **economic sectors**. The three main types of economic sectors are primary, secondary and tertiary economic sectors.

The illustration on the facing page maps out the broad activities under these categories.

A. Primary activities

Those economic activities in which people are directly dependent on nature to produce goods are known as **primary activities** or **primary sector economic activities**.

Primary sector:

The group of activities that involves extraction of raw materials directly from nature such as farming, fishing, forestry, etc.

Classification of economic activities into economic sectors

Primary sector



Agriculture



Mining



Fishing



Raising livestock



Forestry

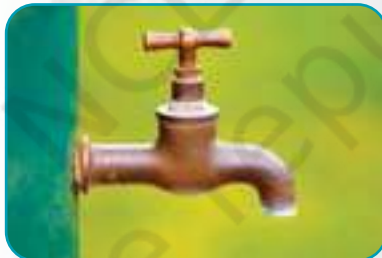
Secondary sector



Construction



Manufacturing



Water supply



Solar power



Electricity production

Tertiary sector



Healthcare



Trade and logistics



Communication



Banking



Transportation

For example, work involving cultivation of grains and vegetables from agricultural farms, collecting wood from the forests, extracting coal from mines, fish from fisheries, eggs from poultry farms, etc., are all primary sector economic activities.

The most common primary activities are agriculture, mining, fishing, raising livestock, forestry, etc. Below are some of the types of activities within the primary sectors.



Greenhouse farming



Mining



Fish farming (fishery)



Forestry



Raising livestock



THINK ABOUT IT

Can you think of any primary activities that you may have seen in the past? What are the natural resources used in these activities? Name two of them and discuss your experiences with your classmates.

- 1.
- 2.

B. Secondary activities

Economic activities in which people are dependent on outputs of the primary sector and transform them to produce goods are known as **secondary activities** or **secondary sector economic activities**. The secondary sector includes the construction of buildings, roads, etc., and providing utilities like water, electricity, gas and other such necessities. It also includes the manufacturing of products in factories and production units to process raw material from the primary sector into some other form that can be further sold or consumed. Some examples of secondary sector activities include the processing of grains obtained from agricultural fields to make flour in mills, extraction of oil from groundnut and processing of tea leaves to derive tea. Similarly, wood from the forest is converted into furniture and paper, cotton is used to make clothes, and steel from iron ore is used to make automobiles like cars, trucks, etc.

Secondary sector:

The group of activities that involves processing of raw materials derived from primary sector into products for sale or consumption.



Automobile factory



Textile factory



Pharmaceutical factory



Furniture production unit

DON'T MISS OUT

Types of Automobiles	No. of units produced in India in 2022
Passenger vehicles like cars	45 lakhs
Commercial vehicles like trucks	10.3 lakhs
Three wheelers	8.6 lakhs
Two wheelers	2 crores

(Source: Society of Indian Automobile Manufacturers, <https://www.siam.in/>)

LET'S EXPLORE

Now that we have seen some examples of secondary sector activities, can you name two more economic activities in the secondary sector?

- 1.
- 2.

C. Tertiary activities

All those economic activities that provide support to people involved in primary and secondary activities are called **tertiary activities** or **tertiary sector economic activities**. These include services that we may not be able to see but which still play a very important role. For example, the driver of a truck transports grains and vegetables from the farm to a factory or the market.

The fruit or vegetable vendors sell the farm produce to household consumers. Similarly, doctors, nurses, teachers, lawyers and pilots provide their services to those who need them. There are technicians who repair and service electronic items including mobile phones and televisions, mechanics who repair vehicles like cars and tractors, and electricians who ensure regular supply of electricity. Their services make our lives easier. Similarly, communication services through mobile and internet, software development, and services at hotels, restaurants, banks, schools, hospitals, airports, shops, **warehouses**, etc. are all examples of tertiary sector economic activities. This sector is also called the **service sector**.

Tertiary Sector:

The group of activities that involves the provision of services which complement both primary and secondary sectors, such as transportation, banking, and management of business.

Warehouses:

Large buildings used for storing products before they are sold, used or rented out to shops.



Software development



Services at restaurant



Services at airports



Retail stores

Interdependence Among Sectors

The three types of economic activities or economic sectors play an important role in the process of conversion of natural raw materials into finished products for final consumption. Let us go on an imaginary excursion to a village in Anand district of Gujarat to study an interesting example where we will understand how the three sectors are interconnected and support each other.

Dairy cooperative: from farm to plate

These days, farmers in Gujarat greet the day with the clinking of milk pails and the happy moos of their best friends, their cows or buffaloes! Cows have a special place in the lives of the farmers and their families. The farmers milk the cows and sell their milk to the **dairy** nearby. At the end of the month, they get paid for the milk based on its quantity and quality. However, this was not the case about 50 years ago.

This is the amazing story of a milk cooperative named Anand Milk Union Limited (AMUL). In the early 1940s, farmers in Anand district would sell milk to the neighbouring villages.

Dairy:
A place
where
milk is
collected
and
stored.

They would have to cycle or walk to nearby villages to sell the milk under scorching heat. As you know, milk spoils or curdles very fast in hot weather. The farmers had to sell the milk quickly before it could spoil. This was a lot of effort for the small amount of money they would earn. So, they depended on people called middlemen, who would buy the milk in bulk at meagre prices from the farmers and sell it in the market. Many times, the farmers felt cheated and harassed by the middlemen.

One day, the farmers collectively approached Sardar Vallabhbhai Patel, a prominent national leader, with their problems. He advised them to form a **cooperative** to become independent and stop relying on the **middlemen**. As a cooperative, the farmers would be able to sell milk as a group, taking care of the entire operation of milk collection, processing and distribution themselves. The farmers took Sardar Patel's advice.



Sardar Vallabhbhai Patel

AMUL was set up in 1946 under the leadership of Tribhuvandas Patel (lawyer and freedom fighter) and Dr. Varghese Kurien (an engineer who was working at a dairy factory in Mumbai).



Varghese Kurien (left) and Tribhuvandas Patel (right)

Cooperative:

A group of people who voluntarily come together to meet their economic and social needs in a formal way. They own the cooperative and decisions are taken by the members collectively.

Middlemen:

Persons who buy goods from producers and sell them to consumers. The middlemen charge a fee for this service.

Pasteurisation:

A process by which milk is preserved through heating to a specific temperature to kill harmful bacteria.

Factory: Building or group of buildings where goods are manufactured, or various components are put together, to make a final product.

Retail: The sale of goods in small quantities for use by the end consumer rather than for resale.

Export:

Goods and services that are produced in one country and sold to buyers or consumers in another country.

Exploring Society: India and Beyond
Economic Life Around Us

This initiative brought farmers, including women, together and gave them control over the production and sale of milk. The milk producers collectively made their own decisions on all matters such as production, **pasteurisation** and sale of milk. The tasks were shared by everyone, which helped raise their income gradually. They did not need the middlemen anymore and became like one big family!



As more and more farmers began to see the benefits of the cooperative, it continued to grow. The quantity of milk that was being collected was so huge that the farmers decided to make other products out of it. They set up a **factory** in Anand, and began to produce butter and milk powder.

Today, the cooperative has a wide range of products made at many milk processing plants and factories all over India. Can you name a few? The products are then transported and sold in both small and large **retail** shops

all over the country. In fact, they also **export** the products to several countries around the world. Is it not amazing?

In this fascinating story, the farmers of this cooperative milk their cows to sell the milk later. This kind of economic activity is called a *primary sector economic activity* because the product (milk) is derived directly from a natural source (cows/livestock).

Milk is then processed and converted from one form (liquid) into another — milk powder, ghee, cheese, butter and many others in the factories. These economic activities are called *secondary sector economic activities*.



What does AMUL do with all the products it makes? It sells them in various places. AMUL uses lorries and trucks, as well as railway, air and shipping services, to transport its products. It has set up retail stores and supplies milk and milk products to other shops in towns, cities and villages all over Gujarat, as well as in different states across India. Here, transportation, trading and retail is a *tertiary activity*.



DON'T MISS OUT

Just like AMUL, there are many other milk cooperatives under brands such as Nandini from Karnataka, Mother Dairy from Delhi-NCR, Aavin from Tamil Nadu, Vijaya from Andhra Pradesh, Kevi from Nagaland, Sudha from Bihar, Verka from Punjab, etc. Can you name one cooperative around you that has helped groups like farmers, persons with disabilities, and women, to come together and has brought prosperity to their lives?

With the help of the images below, let's see how the books you study are made. The images show the transformation of pulp (wooden fibre of a tree) into paper and, after printing, into textbooks.

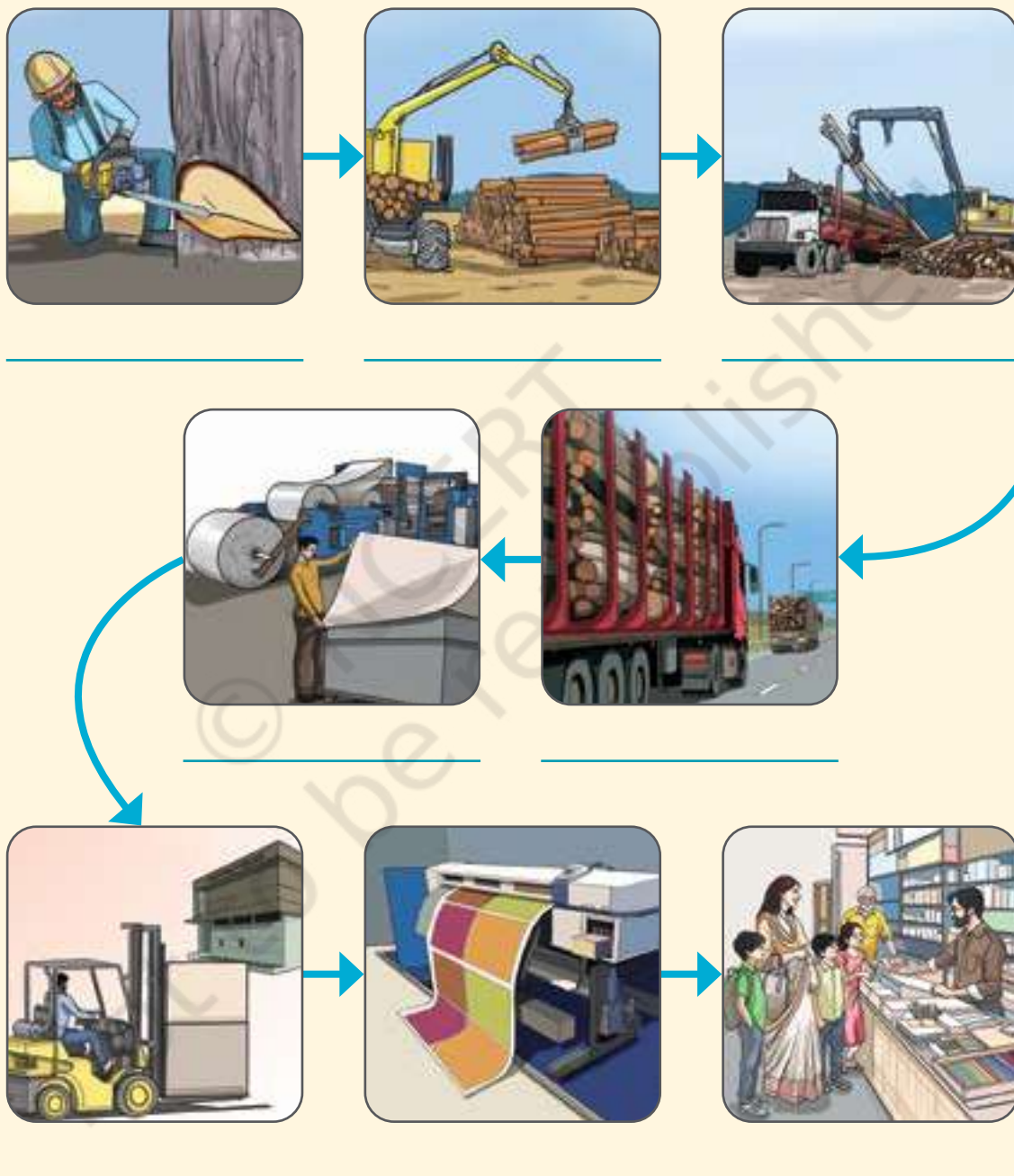


Fig. 14.1

None of the activities that were part of the process – from extracting pulp from the trees to making paper and finally producing the books would have been possible, had it not been for all three sectors working together.



THINK ABOUT IT

Observe the different stages of the process shown in Fig. 14.1 on page 206 and discuss them with your fellow classmates.

LET'S EXPLORE

Label the pictures in the illustration shown in Fig. 14.1 on page 206 as:

1. Primary sector
2. Secondary sector
3. Tertiary sector



DON'T MISS OUT

These days, used paper is recycled to make new paper. Recycling just one tonne of paper saves 17 trees as well as 2.5 cubic metres of landfill space, where waste is dumped. It also takes 70 per cent less energy and water to recycle paper than to make new paper from wood pulp.



What are the different ways through which we can judiciously use paper in the classrooms and offices of your school?

LET'S EXPLORE

List the economic activities in your neighbourhood and label them appropriately as primary, secondary or tertiary. Draw arrows to show how they are connected to each other. In what ways are they dependent on each other? What would happen if one of the activities ceased to exist?

**Before we move on...**

- In this chapter, we learnt about the three sectors of economic activities.
- The various examples and illustrations helped to understand the difference as well as the interdependence between the three types of economic activities or sectors — primary, secondary and tertiary.

Questions, activities and projects

1. What is the primary sector? How is it different from the secondary sector? Give two examples.
2. How does the secondary sector depend on the tertiary sector? Illustrate with a few examples.
3. Give an example of interdependence between primary, secondary and tertiary sectors. Show it using a flow diagram.

From Barter to Money



The importance of money flows from it being a link between the present and the future.

– John Maynard Keynes
20th century economist



Fig. 11.1

The Big Questions ?

1. How did exchange take place before money?
2. Why did money come into existence?
3. How has money transformed into various forms over time?



In the theme “Tapestry of the Past”, you read about the crops that people grew, such as food grains or goods they made like carnelian beads. How do you think they exchanged these goods for things that they needed?

Barter System:
a way of exchanging goods and services without using money.

Money:
the common tool that everybody accepts and uses in order to make or receive payments in exchange for goods and services.

Transaction:
a piece of business that is done between people, especially an act of buying or selling.

Commodities:
Products or goods that can be traded, bought and sold.

People exchanged goods or services for other goods and services. This system is called the **barter system**. How did this work? Suppose you need a pencil and have an extra eraser. Meanwhile, your classmate forgot to bring their eraser but has an extra pencil. You could exchange your extra eraser for the extra pencil that your classmate has. Wouldn't this satisfy your and the classmate's needs? This is how the barter system works.

Today, we use coins and notes to buy and sell things. People also use their mobile phones and computers for such **transactions**.

The barter system was the earliest form of exchange. There is a lot of evidence of it from around the world. People used **commodities** such as cowrie shells, salt, tea, tobacco, cloth, cattle (cows, goats, horses, sheep), seeds, etc.

Fig. 11.2.1. Stone Money: Giant discs of rock – called Rai stones – were used as money on the Yap Island, in the Pacific Ocean country of Micronesia.



Fig.11.2.2. The Aztec copper Tajadero (Spanish word for chopping knife) was a form of money used in Central Mexico and parts of Central America.

Fig. 11.2.3. Tevau (Red feather coil made from birds' feathers) used as money on the Solomon Islands.



Why Do we Need Money?

LET'S EXPLORE



Imagine that you are a farmer and that people use a barter system where you live. You need a whole variety of things—a pair of new shoes, a sweater, and medicines for your grandmother. But you only have an ox that you can

spare. How would you be able to exchange the ox for all the different things you need from different people or places? What difficulties are you likely to face?

For one, you would have to find someone who needed an ox. Now, swapping your ox for a pair of shoes would hardly be a fair exchange! You may have had to go through a series of exchanges—for example, find someone to exchange your ox for several bags of wheat. You would then have to transport all that wheat to several places; first, find someone willing to exchange a part of the wheat for shoes, another person for the sweater, and yet another for the medicines.



In each of these cases, a discussion would take place to arrive at the fair amount of wheat that you could exchange for shoes or for the sweater.



You would have to take the leftover bags of wheat and find a place to store them safely. The next time you needed something, you would have to carry the bags of wheat with you again!



THINK ABOUT IT

What are the different types of difficulties you encountered in the situation above?

In the farmer's story, imagine he finds someone who is willing to trade a pair of new shoes, a sweater, and

medicines—all in exchange for his ox. Do you think it would be easy to come across such a situation?

Just like the farmer, people who depended on the barter system would face many problems in making an exchange in their everyday lives. They would have to find someone who wants the exact item that they want to give, and in return are also able to offer exactly what the other party wants. This scenario is called **double coincidence of wants**.

Even if there are two people who want each other's goods and are also willing to make an exchange, other issues could arise—in what proportion should the two goods be exchanged? In such cases, it becomes difficult to compare the value of one good against another. If one of the people feels that the exchange is disadvantageous, they would not be interested in the exchange. This is because there is no **common standard measure of value**.



THINK ABOUT IT

What are the instances of double coincidence of wants in the above example?

Even if there are two people who want each other's goods and are also willing to make an exchange, other issues could arise—in what proportion should the two goods be exchanged? In such cases, it becomes difficult to compare the value of one good against another. If one of the people feels that the exchange is disadvantageous, they would not be interested in the exchange. This is because there is no common standard measure of value.

In the situation given above, what are the cases where you could encounter the lack of a common standard measure of value?

Similarly, you cannot exchange only a part of the ox for a sweater; this is the problem of **divisibility**. Taking the ox everywhere is a problem and leads to the problem of **portability**. You solved part of the problem by exchanging

Double coincidence of wants: an economic concept that describes a situation where two people each have something the other wants and can exchange them directly.

Common standard measure of value: an agreed-upon worth for a transaction that helps in determining the value of goods and services in the economy.

Divisibility: The capacity of an object or material to be split into pieces or portions.

Portability: The ability of an object or material to be carried or moved from one place to another.

the ox for bags of wheat, but you cannot store the wheat for long; it would rot or get eaten by rats! Thus arises the problem of **durability**.



THINK ABOUT IT

What are the different ways in which money would make the above situation easier for the farmer?



DON'T MISS OUT

Durability:
Trait of an object or material that indicates its longevity and ability to withstand damage due to which it can be stored for a longer time period.

Although money has replaced traditional barter systems all around the world, there are some that still exist today! One of them is the Junbeel Mela (*jun* means moon in Assamese and *beel* means wetland), a three-day annual socio-cultural fair at Junbeel in Morigaon district of Assam. Interestingly, the mela begins with the Agni Puja or worship of fire, a prayer for universal wellbeing.



Fig. 11.3



Fig. 11.4

Beginning in the 15th century, the chiefs of the Tiwa, Karbi, Khasi, and Jaintia tribal communities of Assam and Meghalaya would gather every year to discuss political issues and to maintain friendly relationships. Members of these communities began to gather around this event and soon it turned into a fair, where people would bring their produce and began exchanging them among each other.

This continues to be an important socio-cultural event even today. Bartering begins early in the morning, with the trade of local products such as roots, vegetables, fruit, herbs, and spices. Also seen at the fair are handmade goods and artifacts, made from natural materials sourced



Fig. 11.5

from the forests of the hilly region. These are often exchanged with people from the plains for rice cakes, and other types of food that cannot be grown in the hills.

- **Book exchange:** Think of a fun club where you can trade your old books with friends! It's like a treasure hunt for stories. You bring books you've read and pick new ones from a big collection. For example, you might swap your exciting jungle adventure book for a friend's mystery story. It's a cool way to discover new adventures without spending any money!



Fig. 11.6

- One common example is the **exchange of old clothes** for new utensils, a practice that has persisted over the years. In this system, a vendor visits homes, offering



Fig. 11.7

households new utensils or other household items in return for their used clothes or fabrics. This exchange benefits both parties—households get rid of items they no longer need, while vendors collect materials that can be resold, repurposed, or recycled.

LET'S EXPLORE



The illustrations above show you some of the ways in which people practise barter today. Have you observed similar practices in your locality? What are the types of experiences people have in this process?

Basic Functions of Money

It is said that “necessity is the mother of invention.” As the types and numbers of things that were being exchanged grew, and the distances across which barter was beginning to take place became longer, it became clear that there was a need for a different system. A common *medium of exchange*

would make trade easier and so, money came into existence. As more and more people began to use it for transactions—buying and selling goods and services—it became the accepted method of payment.

As we saw in the farmer's story above, he could not store the wheat for long as it would rot or get eaten by rats.



Fig. 11.8

If the farmer uses money instead of wheat as a medium of exchange, he can keep the money for a longer time and use it for making purchases later. So, money acts as a **store of value** that can be used later. Isn't it fascinating!

Money also serves as a *common denomination* that measures the value of goods and services, and enables the comparison of goods and services in terms of their prices.

For example, your parents pay money to the shopkeepers in exchange for various products. This money is used by the shopkeepers to pay salaries to their workers. The workers use the same medium to buy everyday essentials and other goods, pay their children's school fees, etc.



Fig. 11.9



THINK ABOUT IT

Suppose you need to buy a book. You have ₹50 in your pocket. You visit the bookshop in your neighbourhood where the shopkeeper tells you that the book is worth ₹100. What options do you have to buy the book today? Will you request the shopkeeper to allow you to make the rest of the payment later?

The fact that money is accepted as a way of making deferred payments makes money a **standard of deferred payment**.

The Journey of Money

LET'S EXPLORE

Look at the timeline given below. What are the changes in money that you observe?

Coinage

As you can see from the timeline, coins were among the earliest forms of money. During those times, rulers would issue coins that were used by the citizens of their respective kingdoms for transactions. So different kingdoms would have their own coinage. The **minting** and issue of coins was controlled entirely by the rulers. Over time, the coins of powerful rulers were accepted across various kingdoms and not just their own. This facilitated trade across geographies. The coins were made from precious metals like gold, silver, and copper or their **alloys**. They were called *kārṣhāpaṇas* or *paṇas*. They had symbols punched on them called *rūpas*.

Minting:
The process of producing coins. A mint refers to a manufacturing facility that produces coins that are used as a nation's currency.

Alloy:
A metal made by combining two or more metallic elements. This makes the coin strong.

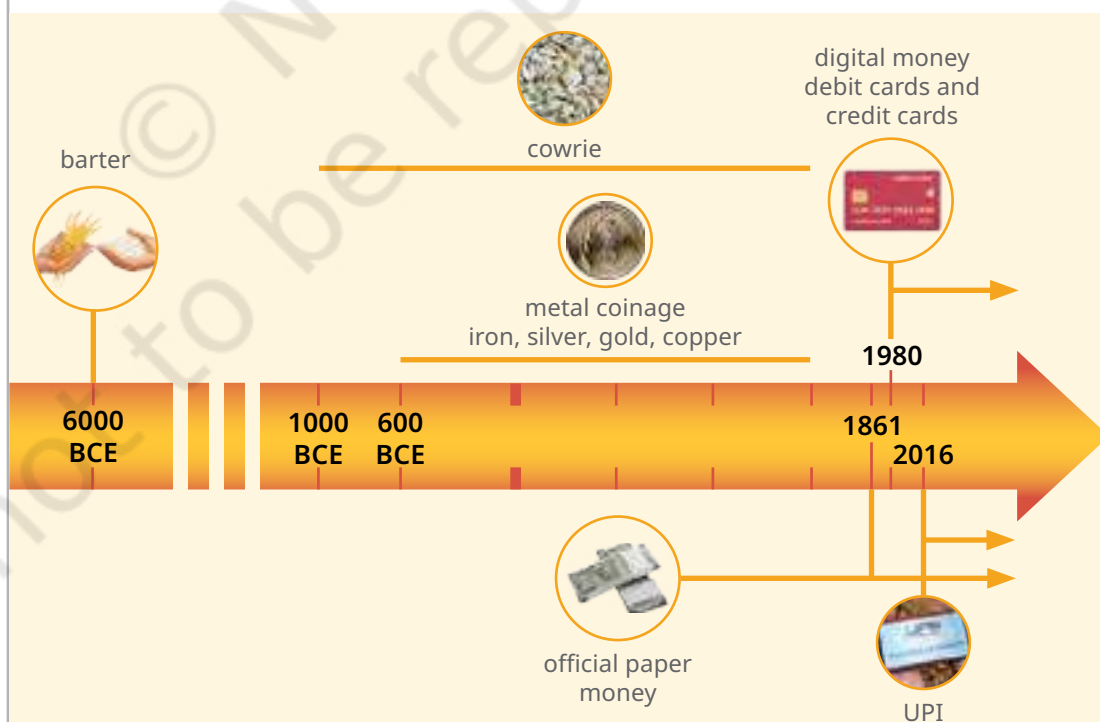


Fig. 11.10. Evolution of money in India - a broad timeline

Does this word sound familiar to a word we use for money today in India?



DON'T MISS OUT

- ❖ Is it not interesting that variations of the word 'paṇa' continue to be used in Tamil, Telugu, and Malayalam as *paṇam* and in Kannada as '*haṇa*' for money?
- ❖ Alloys of silver and copper were used to mint coins. The coins we use today are also alloys consisting largely of iron. They contain other materials like chromium, silicon, and carbon in precise proportions. You will learn more about alloys in your science lessons.

In ancient times, the two sides of the coins—the head (**obverse**) and the tail (reverse)—had different kinds of symbols and motifs engraved on them. These included nature motifs like animals, trees and hills, and those of kings or queens, and deities.

For example, the coins of the Chalukyas had a *Varaha* image (avatar of Viṣṇu) on one side and decorated three-tiered parasol on the other.

Obverse:
the side
of a coin
or medal
bearing
the head
or principal
design.



Coinage from Chalukyas of Kalyana featuring Varaha (avatar of Viṣṇu) and Royal Parasol



Silver coin showing tiger emblem of Cholas (850–1279 CE)

Fig. 11.11

LET'S EXPLORE

The coins shown in Fig. 11.12 were found during excavations in Pudukkottai in Tamil Nadu. Their heads embossed are those of Roman kings. What conclusions can we draw from such a finding?



Fig. 11.12. Roman gold coins excavated in Pudukottai India

The use of coinage helped boost India's maritime trade with the world. For example, they were found in parts of Kerala and Tamil Nadu. This throws light on the trading activities of southern India with the rest of the world. Based on this finding, scholars conclude that the trade was in favour of India.



DON'T MISS OUT

1 anna was equal to 1/16 of a rupee! In 1947, one anna could buy a dozen bananas.



1 half
anna, 1942

1 quarter
anna, 1918

1 anna,
1943

1 paisa,
1945

Fig. 11.13

Today, we see coins of different sizes (shown below) for various denominations with both Hindi and English used on each coin. Special coins are also minted to mark important events for the nation.



DON'T MISS OUT

The ₹ sign was adopted by the Government of India in 2010. It was designed by Udaya Kumar from the Indian Institute of Technology, Bombay (Mumbai). The symbol is a mix of the Devanagari “Ra” and the Roman “R” with two parallel

horizontal stripes running at the top representing the national flag and also the “equal to” sign.



Coinage today



Coin with symbol marking India's 75 years of independence in 2021

Fig. 11.14

LET'S EXPLORE

Organise yourselves into groups of five students each. Take up a group project to collect old coins from family members, neighbours, shopkeepers, and so on. Document their various features—what are they made of, what is the year inscribed on the coins, what do you observe on the obverse and reverse sides of the coins. What can you guess from your observations? How would you know if your guesses are true?

While the barter system used non-metallic money as discussed above, coinage, that is metallic money, gave way to other forms of money!

Paper Money

LET'S EXPLORE

What do you think happened as coins began to be used for all types of exchanges, whether to buy vegetables or to buy some land? What problems could have come up?

As you may have imagined, it became difficult to carry a large number of coins. Storing the coins also became a problem. The search for a more suitable alternative ended

Currency:

System of money that is used in a particular country. For example, coins and paper notes that are used in India in terms of rupee is the Indian currency.

Denominations:

Units in which coins and paper notes are classified. For example, denominations of Indian currency include 50 paise, ₹1, ₹2, ₹5, ₹10, ₹20 coins and paper notes of ₹10, ₹20, ₹50, ₹100, ₹200, ₹500 and ₹1000.

with the use of paper money. Paper money or **currency** was first used in China and was introduced in India in the late 18th century.



Fig. 11.15. Uniface notes of Bank of Bengal (Left) and Ten rupee note from Bank of Bombay (Source:RBI)

While coins are used for smaller **denominations**, paper currency is used for higher denominations.

Today, most of the currency notes you see look like this ...



Fig. 11.16. Paper currency today

LET'S EXPLORE

Look at a 50 and a 100-rupee note. Can you identify the motifs depicting India's cultural heritage on the reverse side of the notes? Find out more about them.

→ Feel the surface of the notes. What special features of currency notes help visually impaired persons to identify the notes' denominations?



Fig. 11.17

Earlier in this chapter, we read that in ancient times coins were issued by rulers. Today, in India, we have a central authority called the Reserve Bank of India (RBI) that controls the issue of currency. It is not legal for anybody other than the RBI to issue currency.

New Forms of Money

As time has progressed and technology has advanced, other forms of money have come to be used today. Let's look at some of them.

Krishnappa sells seasonal fruit on a cart. Alongside the colourful fruit that he arranges neatly on his cart is a little card with a **QR code**. His customers scan the QR code with their mobile phones and pay for their purchase digitally. The payment then goes directly into Krishnappa's bank account.



Fig. 11.18

Apart from tangible forms of money such as coins and paper notes, money has taken intangible forms that we cannot touch and feel. This is called digital money which is in electronic form. Have you observed other people around you making or receiving payments without using coins and notes? Different payment methods like debit cards, credit cards, net banking, UPI (Unified Payments Interface), etc., are also used for transactions. These mediums directly transfer money from one person's bank account into another. You will learn more about the modern methods of monetary transactions later.

QR Code: Stands for "quick-response" codes, these are collections of black and white squares, which are readable by devices like smartphones and QR scanners. They contain information about the receiver's bank account and are used for making monetary transactions.



Before we move on ...

- The barter system existed before money came into existence. A variety of commodities were used to facilitate exchange.
- The limitations of the barter system led to the development of money as a medium of exchange.
- Forms of money evolved through time, such as shells, coins, and paper currency. This evolution continues as we create new and easier ways to make and receive payments, including the QR code that you saw in the illustration above.

Questions and activities

1. How does the barter system take place and what kinds of commodities were used for exchange under the system?
2. What were the limitations of the barter system?
3. What were the salient features of ancient Indian coins?
4. How has money as a medium of exchange transformed over time?
5. What steps might have been taken in ancient times so that Indian coins could become the medium of exchange across countries?
6. Read the following lines from the Arthaśhāstra.
 “An annual salary of 60 *paṇas* could be substituted by an *āḍhaka* of grain per day, enough for four meals...” (One *āḍhaka* is equal to about 3 kg) What does this indicate about the value of one *paṇa*?
 The fine for failing to help a neighbour was 100 *paṇas*. Compare this with the annual salary. What conclusion can you draw about the human values being encouraged through this?
7. Write and enact a skit to show how people may have persuaded each other to use cowrie shells (or other such items) as the medium of exchange.

8. The RBI is the only legal source that prints and distributes paper currency in India. To prevent illegal printing of notes and their misuse, the RBI has introduced many security features. Find out what some of these measures are and discuss them in class.
9. Interview a few of your family members and local shopkeepers, and ask them their preferences in making and receiving payments—do they prefer cash or UPI? Why?

Noodles

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*'Noodles' is our abbreviation for 'Notes and Doodles'!



Understanding Markets

CHAPTER

12



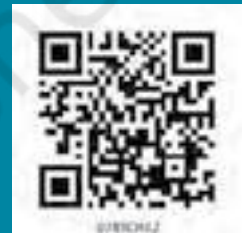
Prosperity emanates from the market that develops when people need goods and services that they can't create themselves.

– Adam Smith, 18th century economist



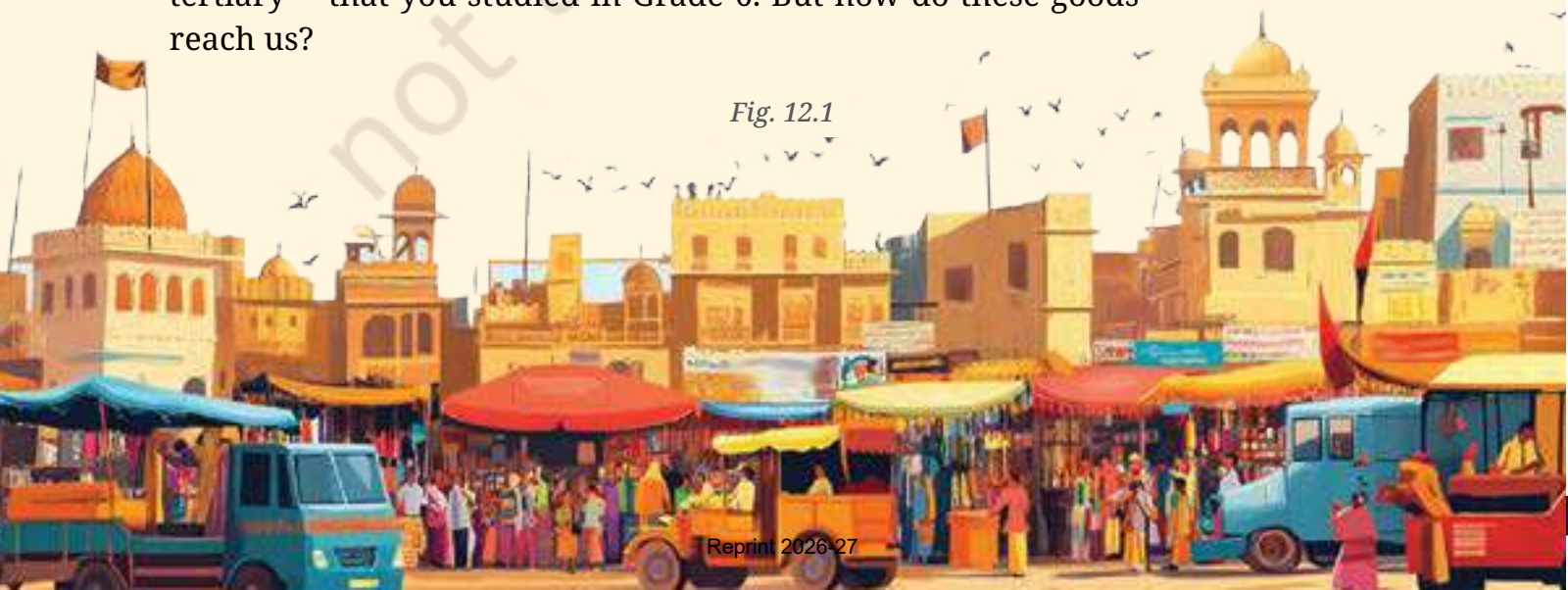
The Big Questions ?

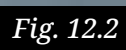
1. What are markets and how do they function?
2. What is the role of markets in people's lives?
3. What role does the government play in markets?
4. How can consumers assess the quality of goods and services they purchase?

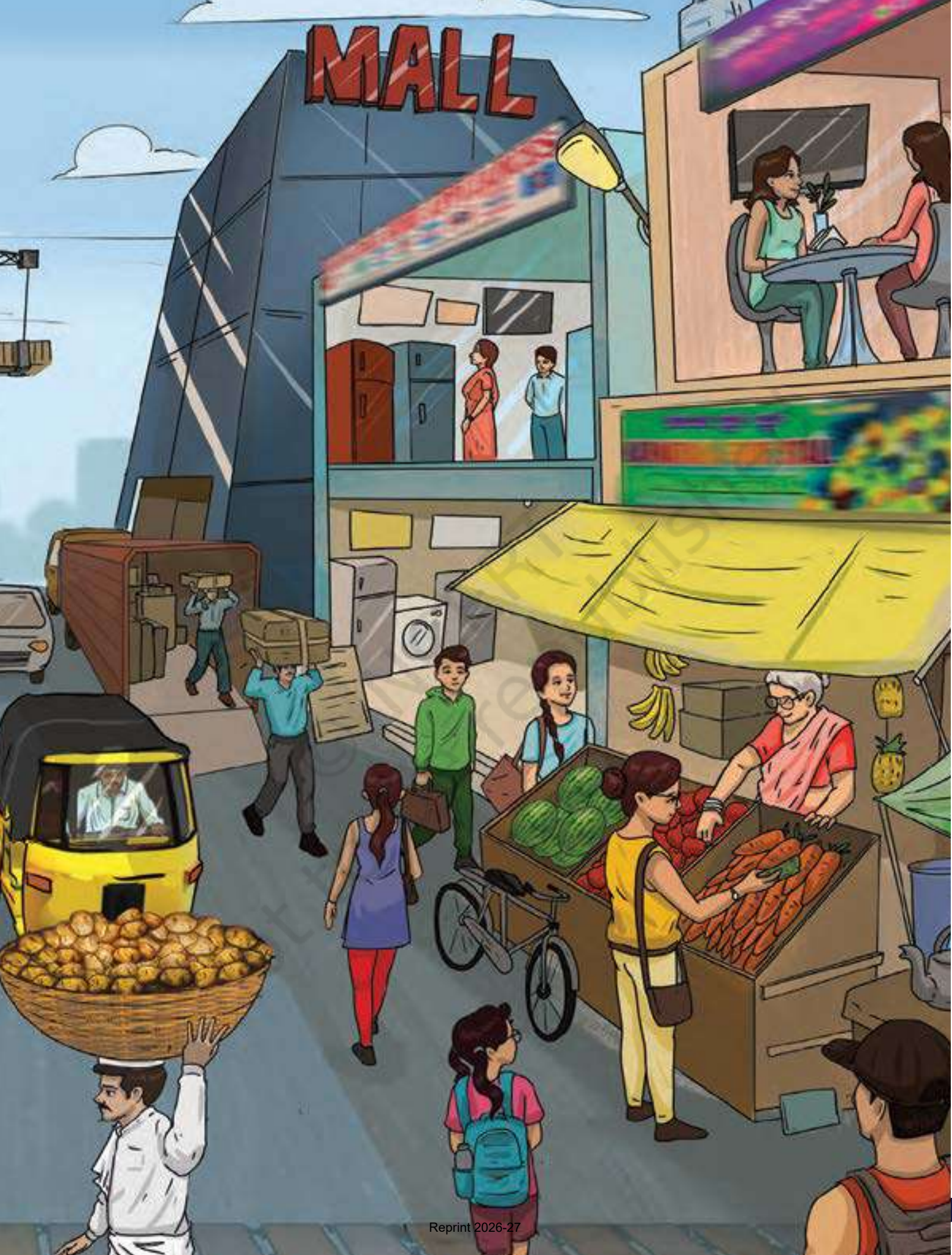


In the picture on the following page you will see people buying and selling goods—vegetables, fruits, clothes, groceries, mobile phones, refrigerators, and so on. These goods result from various types of economic activities—primary, secondary, and tertiary—that you studied in Grade 6. But how do these goods reach us?

Fig. 12.1







Needs:

In economics, a need is something that a person requires to survive, such as food, water, clothing, and shelter

Wants:

In economics, a want is something that a person desires but is not essential for survival.

What is a Market?

A place where people buy and sell goods is called a market. It is also known as bazaar, haat (in Hindi), and *mārukatté* (in Kannada). What is it called in your region? This can be at a physical place or, as is becoming popular today, online. Goods and services become available to individuals, **households**, and **businesses** through markets. For a long time, people have relied on markets to fulfil their **needs** and **wants** for goods and services. In addition, markets connect people, traditions, and ideas.

Let's see an example of a market from 16th century India.

The Glorious Hampi Bazaar, Karnataka



Fig. 12.3. Hampi Bazaar today

Trade:
buying and
selling or
exchange
of goods
and services
between
people or
countries

The Hampi Bazaar in Karnataka was one of the prosperous markets in the Vijayanagara Empire which was the centre of flourishing **trade**. The bazaar was located opposite the Virupaksha temple. The sheer abundance and prosperity of the city have been described in many foreign accounts.

The famous Portuguese traveller, Domingos Paes, called Hampi “the best-provided city in the world” due to the wide variety of products traded in the market— grains, seeds, milk, oil, silk, animals like cows, rabbits, horses, and even birds like quails and partridges. Another Portuguese traveller, Fernao Nuniz, wrote about the bazaar, “There were craftsmen, also, working in their streets, so that you

saw made there, golden jewels and gewgaws, and you will find all kinds of rubies and diamonds and pearls, with every other kind of precious stone for sale... sellers of cloths... they being of cotton... grass and straw in infinite abundance. I do not know who could describe it to be believed, so barren a country is this... it is a mystery how there should be an abundance of everything therein.”

LET'S EXPLORE

- Can you imagine what this bazaar must have looked like during its peak?
- Do you know of any old markets from your state? How would they be similar or different from today's markets? Discuss with elders in the family and community.

Let's learn more about markets and how they function!

LET'S EXPLORE

Observe the illustration. What are these people discussing? Imagine you and your partner as a buyer and a seller of guavas. Prepare a set of dialogues between both of you and present it in your class as a skit.



Fig. 12.4

Certain features are required for places to be called markets. As you observed in the figure 12.2 (on introductory big spread page number 248) every market has a buyer and a seller. They both need to agree on a **price** at which the transaction would take place. Price is an important feature in completing a transaction.

Price:
Price is the amount at which a buyer is willing to buy, and a seller is willing to sell particular goods or services.

Often the buyers and sellers negotiate and bargain to arrive at an acceptable price. What type of negotiation and bargaining took place in your skit?



THINK ABOUT IT

Can you think of a type of market where negotiation is less common and why?

Prices and Markets

What happens when there are many buyers and sellers in the market? How do prices respond to how buyers and sellers interact in the market?

In the figure given below, the seller wants to sell the guavas at ₹80 per kg. However, buyers may not be willing to buy at that price. If a buyer finds the price very high, he will ask for a price that he is willing to pay. The seller may not be willing to sell at the price offered by the buyer because it would not be profitable for him. The buyer and seller negotiate until a mutually agreeable price is reached. The transaction can then be completed. If such a point is not reached, i.e. the point where the buyer and the seller agree on a price, the transaction may not take place.

Let's see some scenarios below to understand this.

1. **What happens in case the seller fixes the price very high?**



Fig. 12.5

2. What happens in case the seller fixes the price very low?



Fig. 12.6

3. Over time the price of guavas is fixed at one that is just right, not very high for the buyer, not too low for the seller!



Fig. 12.7

Learning from all three scenarios, the seller can assess approximately what quantity of guavas are needed by the buyers and offer that quantity in the market in future.

Over time, the amount of goods offered by the sellers and the amount required by the buyers help determine the price of the goods that is just right, high enough for the seller, and low enough for the buyer.



THINK ABOUT IT

Vegetables are sold cheaper late at night at the weekly market compared to during the day. Why do you think this is so? Garment stores offer heavy discounts on woollen clothing at the end of the winter season. Why does this happen?

Markets Around Us

Markets are present everywhere and in various forms.

Physical and online markets

A physical market is where buyers can meet the seller physically, and purchase goods or services in exchange for money. This is the most common type of market. It includes weekly markets and haats where vendors sell vegetables, other essential items, and handicraft items lined up on a cart. Local markets with shops and buzzing with vendors selling street food, knick-knacks, and so on are also physical markets. There are also multi-storey buildings, i.e., malls in cities and towns spanning large areas with stores inside.

Today buyers and sellers need not necessarily meet in person to engage in a transaction. They can transact from a convenient location even thousands of kilometres away from each other.

They can use shopping applications (apps) or websites on a phone or a computer. These apps or websites are created by businesses that make available a wide variety of goods and services. We will read about how this works in a section below.

One can buy goods ranging from books, clothes, furniture, and grocery items to electronic items like TVs, mobile phones, and laptops, and get them delivered to their doorstep. **Manufacturers** can also buy components online to be used as

inputs for production of goods. Apart from goods, one

can also avail of services like online classes without having to step outside the home. Payments for such services can also be made online.

Inputs for production:

Materials or resources that are used in the production of goods and services.

Manufacturer:

A person or company that makes goods for sale



Fig. 12.8



THINK ABOUT IT

- ❖ What do you think are the pros and cons of online and physical shopping respectively? Explore this question from the point of view of both, sellers and buyers.
- ❖ Some services require in-person contact like tailoring and cannot be provided online. Can you suggest other services where physical markets are needed?

There are other types of markets that do not transact goods and services. One of them is the share or stock market.

Ask your family members, teachers, or members in your community about it. We will explore these concepts later in the year.



Fig. 12.9. Stock Market

Domestic and international markets

A market where goods and services are bought and sold within the geographical boundaries of the country is called a domestic market. For example, to print this book, paper was procured from big paper mills located all over India. The transaction between the buyer and the seller took place within the country.

International markets exist outside a nation's boundary; the sellers in one country **export** their products to another country, or the buyers in one country **import** products produced in another country. Thus, trade occurs across borders of countries.

Export:
Selling goods or services produced in one country to a buyer in another country.

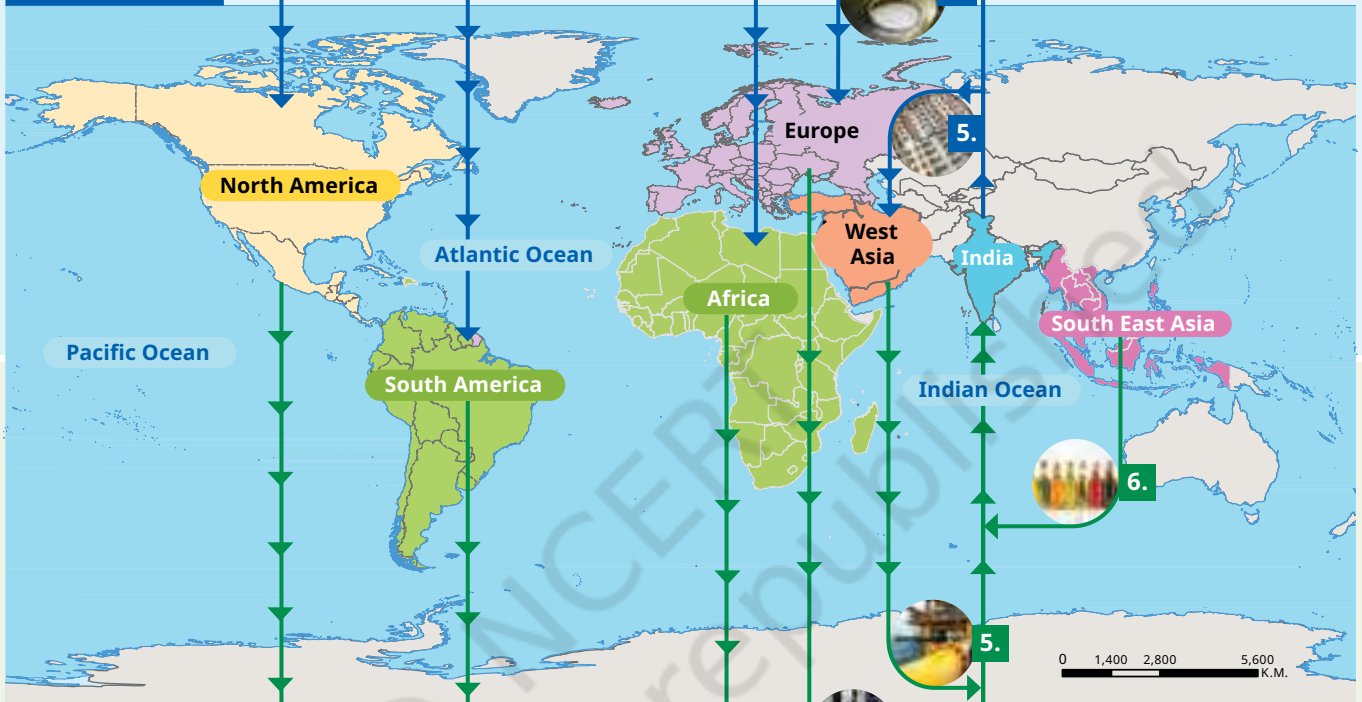
Import:
Buying goods or services from other countries and bringing them into one's own country.

Economic Life Around Us
12 - Understanding Markets

India's exports and imports around the world

India's exports:

1. **North America:** Outsourced services like software
2. **South America:** Chemical products
3. **Africa:** Pharmaceuticals
4. **Europe:** Engineering goods like machinery in food processing, boilers
5. **West Asia:** Refined petroleum products



India's imports:

1. **North America:** Aircraft and components
2. **South America:** Mineral ores like copper
3. **Africa:** Diamonds
4. **Europe:** Electrical equipment
5. **West Asia:** Crude petroleum, fertilizers
6. **South East Asia:** Vegetable oils

Fig. 12.10

DON'T MISS OUT

India was the world's largest importer of vegetable oils like palm oil, sunflower oil, and soybean oil in 2024. Most of the palm oil is imported from Malaysia, Indonesia, and Thailand.

Wholesale and Retail Markets

Several participants play their role in the smooth functioning of the markets.

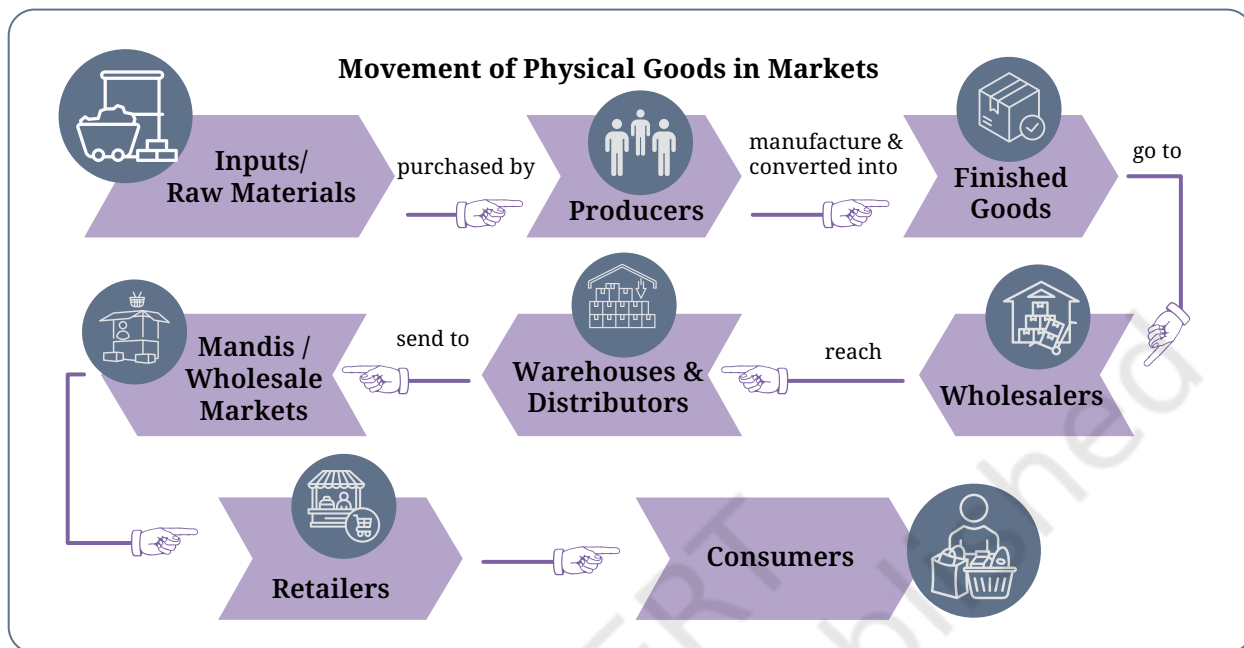


Fig. 12.11

LET'S EXPLORE

Observe the diagram and describe the flow of goods from the manufacturer/producer to the consumer. What is the role of the wholesaler and the retailer in the flow?



In the case of physical markets, wholesalers buy goods in large quantities from the producer or manufacturer of the product. For example, grains, vegetables, and fruits are bought by wholesalers directly from the farms. The produce is then stored in large warehouses called godowns. In the case of perishables, the warehouses



Fig. 12.12. Cold storage facility for vegetables

Cold storage:
Specialized warehouses or designed to maintain specific low temperatures to preserve perishable goods.

may also have **cold storage** facilities. They are then brought to markets called *mandis*.



Fig. 12.13. Warehouse storing grains



Fig. 12.14. Large warehouses of wholesalers

Similarly, there exist wholesale markets for other commodities like chemicals, electronic items and components, construction materials, automotive parts, etc.



Fig. 12.15. Khari Baoli spice market, Old Delhi (spices and dry fruits)



Fig. 12.16. Flower market, Bengaluru

The wholesalers supply goods to the shops and stores located near households. These shopkeepers are called retailers. They sell goods to final consumers like us. Unlike wholesalers, retailers sell in smaller quantities, and the products are meant for consumption rather than resale. Retail stores also exist for services like salons, movie theatres, and restaurants. Retailers



Fig. 12.17. Johari Bazaar, Jaipur (gems and jewellery)

help increase the availability of goods and services to households. In some cases, it may be difficult for wholesalers to reach a large number of retailers because of distances and terrains. **Distributors** help to bridge this gap. Do you remember the middlemen for milk in the AMUL story from Grade 6?

However, the distribution channel is different in the case of online markets. Here manufacturers send bulk quantities of their products to the warehouse of the business that sells through online apps. Consumers buy the product from the online option (website or mobile application). These businesses are called aggregators. The **aggregator** then packs the products and delivers them to the online buyer.

Distributors:

Individuals or businesses who supply goods from manufacturers and wholesalers to retailers.

Aggregator:

Website or mobile application that organizes and combines offers from multiple sellers and sells them to consumers at one place.



Fig. 12.18. Garment shop



Fig. 12.19. Salon



Fig. 12.20. Mall



Fig. 12.21. Grocery store

Let's explore the chain of supply in physical markets for the **textile market in Surat, Gujarat**—Asia's oldest textile market, and the city famously known as a textile hub.

The Surat textile market consists of thousands of factories manufacturing cotton and synthetic textiles. In the case of cotton textiles, raw cotton is received here through cotton *mandis* from nearby states like Maharashtra, as well as from other parts of Gujarat. It is transformed into finished fabric or garments after processing at various stages—weaving on power looms, dyeing in processing units and so on. The product moves from one stage to another through markets—for woven fabric, for dyed fabric, and for finished products (sarees, or ready-made garments, for example).



Fig. 12.22.

The finished product from the fabric is traded by the manufacturing units in the wholesale market. The wholesalers are an important channel of supply as they oversee the distribution of products to small shopkeepers and big retail stores across the country and internationally. They also assess how much product is required by retailers. This helps maintain the stock of products with the manufacturers and ensures an uninterrupted supply of products to the end consumers.

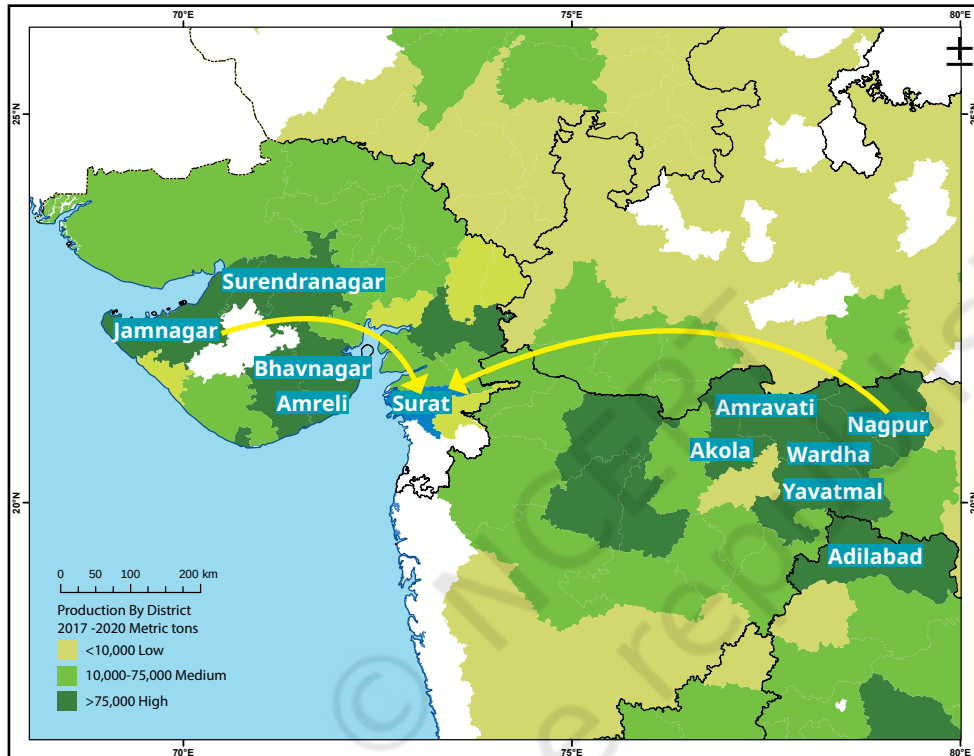


Fig. 12.23. Supply of raw cotton from surrounding cotton clusters to Surat

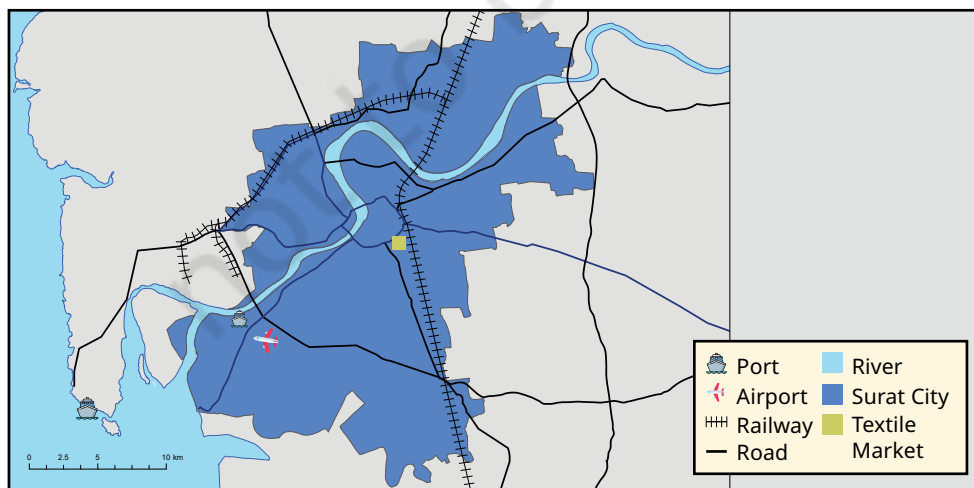


Fig. 12.24. Surat City Map



Fig. 12.25. A wholesaler's warehouse of fabric

LET'S EXPLORE



Ask your nearest retailer about a product, its place of origin, and the chain of suppliers in the process of the product reaching the shop. Trace this using a flow chart like Fig. 12.11 and share it in class.

DON'T MISS OUT



- Apart from textiles, Surat is home to the largest diamond industry in the world. Approximately 1.5 million artisans are involved in activities like cutting and polishing diamonds on a gigantic scale. Trade flourished here from the 16th century onwards. The city's location on the west coast led to the setting up of ports and road networks that continue to be important today. Communities of expert artisans and skilled persons have lived here for centuries; their skills have been passed on over generations making it a flourishing city.
- Can you spot the port, highway and railway network on the map in Fig. 12.24? How do you think they helped make Surat a trading hub?

The Role of Markets in People's Lives

As we can see from the sections above, markets play an important role in the economic life of the people. It facilitates transactions between producers and consumers. It helps individuals, households and businesses access goods and services that they need and cannot produce themselves.



THINK ABOUT IT

We have discussed different dimensions of markets. Can we imagine what life might be like without markets? What would happen if farmers did not bring rice, wheat, dal, vegetables and fruits to the market? What would happen if the producers of cloth in Surat could not procure inputs like cotton from markets?

In this section, we will explore a few other dimensions of the role of markets.

Aakriti is a professional artist who creates oil paintings on canvas. Her paintings are appreciated, but she finds it difficult to find buyers. She is worried about where to sell the paintings and what price she should offer them for. Unlike the case of guavas, there are fewer local buyers and sellers for artwork.

Can you think of other products which do not have a ready market? How does it affect those willing to buy or sell? What are the different ways in which artists can find buyers for their work today?

How markets benefit society

LET'S EXPLORE

Consumers prefer to buy refrigerators that use less electricity. When a large number of consumers begin to ask for refrigerators that use less electricity, what do you think happens in the network you saw in Fig. 12.11?



The producers get an indication as to what consumers would buy. They produce refrigerators which use less electricity. This benefits society through the production of energy-efficient refrigerators.

Although buying and selling is an economic activity that involves monetary exchange, interactions in the markets often move beyond just enquiring about the product or service or negotiations between parties.

Often, a relationship develops between buyers and sellers that continues even across generations. Some families have long-lasting trusted relationships with their tailor, jeweller, and doctor over decades. Many families in India maintain an account with the local grocer that is settled at the end of the month.

So, while the primary role of the market is to promote economic activities, it also has non-economic significance in many people's lives.

Mother's Market, *Ima Keithal* in the Meitei language of Manipur, is a unique market in Imphal. About 3000 women own and run all the shops in this market. They sell vegetables, clothes including traditional Manipuri attire, hand-loom and handicrafts, local produce, and daily essentials that people in the city and the surrounding areas require. On one hand, the market provides employment, becoming an important source of income for thousands of families; on the other hand, the market is a melting pot of cultures. People from different communities come together to exchange ideas and enjoy shared traditions.



Fig. 12.26. Ima Keithal of Imphal



DON'T MISS OUT

There are many traditions followed even today that go beyond just buying and selling. In south India, the sellers of haldi and kumkum (turmeric and vermilion) give a small quantity of haldi and kumkum separately, at no charge, as a mark of auspiciousness and good wishes to the buyer.



Fig. 12.27

LET'S EXPLORE

Have you observed any such practices in your community or neighbourhood? Describe the practice as a drawing or in a short paragraph.



Government's Role in the Market

Markets function through interactions of **demand** from buyers and **supply** by sellers. However, there are some situations in which this may not work very well. The government plays a crucial role in such situations. It monitors the interaction between consumers and producers, and fair determination of price.

Controlling prices for protecting buyers and sellers

The government **controls the prices of certain goods**. For example, it sets the maximum price that the seller can charge. Several essential goods and services, such as lifesaving drugs, have an upper limit on their prices. Another instance is where the government sets the minimum price at which essential agricultural products like wheat, paddy and maize can be sold. This ensures that farmers do not incur losses. The government also sets minimum wages for work done by employees so that employers make fair payments to them.

Demand:

Quantity of a product or service that consumers are willing and able to purchase at a particular price at a given time.

Supply:

Quantity of a product or service that sellers are willing and able to sell at a particular price at a given time.

However, the government needs to carefully implement such price limits. If the price is too low, producers would not have any motivation to produce. If the prices are too high, consumers would be disadvantaged.

LET'S EXPLORE



- Onions are an important part of the cuisine in most parts of India. In some seasons, the supply of onions comes down in the market. What do you think happens to the price of onions when this happens?
- What will happen if the people supplying onions do not bring the required quantities to the market? What do you think the government should do in this situation?

Ensuring quality and safety standards

The government has a role in ensuring the welfare of consumers and protecting them from unfair practices. The government ensures that manufacturers follow the required quality and safety standards while producing goods and delivering services. For instance, pharmaceutical companies manufacture medicines for treating diseases. The government sets procedures for approvals of medicines and conducts sample testing to check if the produced drug meets standards of quality. These regulations ensure the quality and safety of the drugs so that there is no risk to the consumers' health.

Mitigating the external effects of markets

Markets sometimes have significant effects beyond the selling and buying. For example, the markets for certain goods require production in factories that could pollute the environment. The government plays a crucial role in understanding and controlling such effects of markets. For example, what happens when the manufacturing of certain items, like single-use plastics, pollutes the environment and poses health risks to consumers? In such cases, the government intervenes by implementing strict regulations to mitigate these negative effects.

Similarly, the government puts in place systems to monitor the weights and measures of the packaged products to check the net quantity contained in the package.



THINK ABOUT IT

The practice of rulers protecting consumers is not a phenomenon of modern India. Kautilya's Arthaśhāstra includes instructions for the traders trading in clarified butter (ghee). It mentions that buyers shall be given 1 / 50 part more as **mānasrāva** to compensate for the reduction in quantity owing to (the ghee)...sticking to the measuring can.

Governments make rules to ensure markets work fairly and consumers are not exploited. However, too many rules can make it difficult for markets to function properly.

Providing public goods

Producers make and sell goods and services to be able to make a **profit**. However, there are some goods and services that producers do not expect to make a profit on; for example, public parks, roads, policing, and so on. In addition, you read about the rights that citizens have to certain welfare provisions in a previous chapter. So, the government provides these **public goods** and services.

Public goods:

Service or commodity that is accessible or available to all members of a society. Their present use does not diminish their availability for future use.



THINK ABOUT IT

- ❖ What are the other areas where you can see the government being involved in the markets?
- ❖ Are there areas where government intervention needs to be reduced? Discuss with family or relatives.

How can consumers assess the quality of products and services?

Markets enable access to a wide variety of goods and services to consumers. How will consumers decide what they would like to buy?



THINK ABOUT IT

There is a marbles competition in your neighbourhood with the team in the next street. You want to buy new marbles for the competition. You have ₹150 saved up. You go to a shop to buy the marbles. What are the qualities you would look for in the marbles so that you can win the competition?



Fig. 12.28

Did you think about the price, size of the marbles, strength and the attractive colours? As you can see, every consumer would need to assess the quality of products that they are buying.

In the following section, we will look at various ways in which this can be done.

Suppose your parent asks you to get a 1 kg packet of gram flour from the nearby grocer. There are different types of packets available at the shop such as the one shown below. Observe it carefully. How would you determine that the quality of gram flour meets the required standards?



Fig. 12.29

Did you notice the FSSAI logo?

FSSAI means Food Safety & Standards Authority of India and its symbol on the food packets and cartons indicates that food has been tested by the government and is safe to consume.



Government agencies provide such certifications that help buyers to assess product quality. Their presence on the product or its package confirms that the product fulfills the minimum quality standards.

Let's see what each of these labels mean:

- Just like FSSAI, there is Indian Standards Institution (**ISI**) **Mark** issued by the Bureau of India Standards (BIS). This symbol is generally present on electrical appliances, construction materials, automotive tires, paper, etc. This ensures quality and that the product is safe to use.
- Similarly, **AGMARK** (Ag for agriculture) is the certification mark for agricultural products like vegetables, fruits, cereals, pulses, spices, honey, etc.
- Electronics items like TVs, laptops, air conditioners, etc. have **BEE STAR rating**. BEE stands for Bureau of Energy Efficiency. These ratings are printed on the product package as stars. Higher stars indicate that the appliance uses less energy and electricity. This is good for consumers as the electricity bill would be lesser and good for the environment as well.



LET'S EXPLORE

Check out the BEE Star labels on the electronic devices in your home and make a chart of all the devices in an increasing order of their energy efficiency.

On the other hand, purchase decisions of buyers are influenced by the reputation of the product. This is built through word of mouth. Have your family members bought some product because their friends or relatives suggested it to them?



Online reviews and feedback from other consumers about products and services help us decide whether to buy or not while shopping online.



Fig. 12.30

Before we move on...



- Markets facilitate exchange between buyers and sellers at a mutually agreed price which is determined by the demand from buyers and supply by sellers.
- Markets have a chain of participants like manufacturers, wholesalers, distributors and retailers that enables supply of goods to the final consumers.
- Markets are also places for interaction as they bring people together and enable exchange of ideas and traditions.
- The government plays a regulatory role in the markets to promote quality standards for products and services and fair practices in the market. However, consumers can also assess the quality of products and services through certification marks on the products from government agencies and through online reviews.

Questions and activities

1. What are the main features of a market? Recall a recent visit to a market to purchase a product. What are the different features of a market that you observed during this visit?
2. Remember the epigraph from a famous economist at the beginning of the chapter? Discuss its relevance in the context of the chapter you have read.
3. In the example of buying and selling of guavas, imagine that the seller is getting a good price, and is able to make a profit. He will try to get more guavas from farmers to be able to sell them at the same price and increase his earnings. What is the farmer likely to do in this kind of a situation? Do you think he will start thinking about the demand for guavas in the next season? What is likely to be his response?
4. Match the following types of markets with their characteristics:

S.No.	Markets	Criteria
1	Physical market	Goods and services flow outside the nation's boundaries
2	Online market	Deals in bulk quantities
3	Domestic market	Serves the final consumers with goods and services
4	International market	Requires physical presence of buyers and seller
5	Wholesale market	Buyers and sellers meet virtually and can transact at any time
6	Retail market	Lies within the boundaries of a nation

5. Prices are generally determined by the interaction between demand from buyers and supply by sellers. Can you think of products where prices are high despite lesser number of buyers demanding the product? What could be the reasons for that?

6. Look at the real life situation that a retail seller of vegetables encountered: A family came to shop for vegetables. The price of beans that the seller on the cart was offering was ₹30/kg. The lady started to bargain with the seller to bring the price down to ₹25/kg. The seller protested and refused to sell at that price saying he would make a loss at that price. The lady walks away. The family then goes to a super bazaar nearby. They buy vegetables in the super bazaar where they pay ₹40/kg for the beans that is neatly packed in a plastic bag. What are the reasons that the family does this? Are there factors that affect buying and selling which are not directly connected to price?
7. There are some districts in India that are famous for growing tomatoes. However, during some seasons, the situation is not good for farmers. With a large quantity of harvest, there are reports of farmers throwing away their produce and all their hard work going to waste. Why do you think farmers do this? What role can wholesalers play in such situations? What are the possible ways of ensuring that the tomatoes are not wasted, and the farmers are also not at a loss?
8. Have you heard about or visited a school carnival/fair organized by your school or any other school? Discuss with your friends and teachers about the kind of activities organized by students there. How do they conduct selling and negotiation with the buyers?
9. Choose any 5 products and check out the label with the certification signs discussed in the chapter. Did you find products that did not have a logo? Why do you think this is so?
10. You and your classmates have manufactured a soap bar. Design a label for its packaging. What in your opinion should be mentioned on the label for the consumer to know the product better?

Infrastructure: Engine of India's Development

CHAPTER

7

A developed India will be one where urban and rural areas have the same infrastructure — roads, power, water, and communication.

— APJ Abdul Kalam

The Big Questions ?

1. What is physical infrastructure, and how has it transformed over the years in India?
2. How has the expansion in infrastructure affected the quality of life for individuals and communities?
3. What is the role of infrastructure in the development and economic prosperity of the nation?



Fig. 7.1. State-of-the-art physical infrastructure



Introduction

Imagine you wake up one morning, ready for school. But when you step outside, there are no roads. The buses are gone. No one's mobile phone has any signal. The lights won't turn on, the internet is gone, and the tap is running dry! How would you reach school? How would groceries, and stationery reach your nearest market and your home? How would you access utilities like electricity and water? This is what life might look like without **physical infrastructure**, which is a vast network of tangible structures built to keep our cities and villages functioning. It includes transportation systems (roads, bridges, railways, etc.), utilities (electricity, water pipelines), communication networks (internet, telephone lines, telecom towers, etc.), energy infrastructure (windmills, solar parks, oil and gas pipelines, etc.) and so on.



*World's highest railway bridge –
Chenab Rail Bridge, Jammu & Kashmir*



*Delhi-Meerut
Expressway*



India's longest sea bridge – Atal Setu, Maharashtra



*Bhakra Nangal Dam,
Himachal Pradesh*



*Vishakhapatnam port,
Andhra Pradesh*



*Solar power project at Cochin
International Airport, Kerala*



*Muppandal Wind Farm,
Tamil Nadu*

Fig. 7.2. Some forms of physical infrastructure

Why is physical infrastructure important?

One bright morning, Rishabh packed his bags for a two-day trip from Delhi to his hometown, Talegaon in Nashik, Maharashtra.

He started off in his car, zoomed across a wide bridge and then parked the car at the metro station.



He hopped onto the metro to skip the heavy traffic and quickly reached the railway station.



Soon he was on a train, rushing past green fields and towns. He called his mother and shared his location using his smartphone.



After reaching closer to home, he rode a bus that moved through many flyovers.



He was seated right next to Satish, a hardworking tomato farmer from Maharashtra, who was returning from the mandi after selling his harvest. Rishabh saw some of the tomatoes in his bag kept right next to him. He remarked “Ahh! Such red and juicy tomatoes”. Satish told him that his juicy red tomatoes were not just a gift of sunshine and rain.

It was possible because canals and electric water pumps helped irrigation, good roads helped trucks carry his tomatoes to the city, cold storage kept them fresh, and the internet helped him know about the best inputs and market prices. They both wondered how important is the physical infrastructure which is connected like pieces of a puzzle, helping safe and timely travel of people and goods.

Finally, Rishabh got off at the bus stand, boarded an autorickshaw that dropped him at his door.



Fig. 7.3. Rishabh's journey

Physical infrastructure is the backbone of our nation — it makes life easier for people, communities, businesses, and enables government to function smoothly. For instance, transport systems like roads, railways, airways, and shipping connect places of origin or manufacturing of goods and services to the nearest markets. India has had a network of trade routes since ancient times, and today's modern infrastructure has taken this forward to boost trade, both within and outside the country. Better infrastructure also supports tourism, connects remote areas, and helps during emergencies like floods or earthquakes. It also strengthens national security by improving access to all kinds of terrain for the defence forces.



THINK ABOUT IT

- What might happen to Satish's efforts if any part of the infrastructure is missing?
- What happens when a new highway is built near a village? How does it impact the lives of the people living nearby?
- Imagine if there were no internet or phone services. How would this affect people's ability to work or learn?

Transportation Infrastructure

How do you and your family members commute to nearby and far-off places? Let's learn about the transportation infrastructure that enables the mobility of people and goods.

a) Road and highway network

Did you know? India has the second-largest road network in the world, only after the United States of America (2024). There are many types of roads. The local roads near your home help children reach school, farmers carry crops to markets, and ambulances reach hospitals. Then there are the bigger roads like state highways connecting towns and districts within a state along with other bigger highways. These are built and maintained by states through their public works departments. Then, national highways and

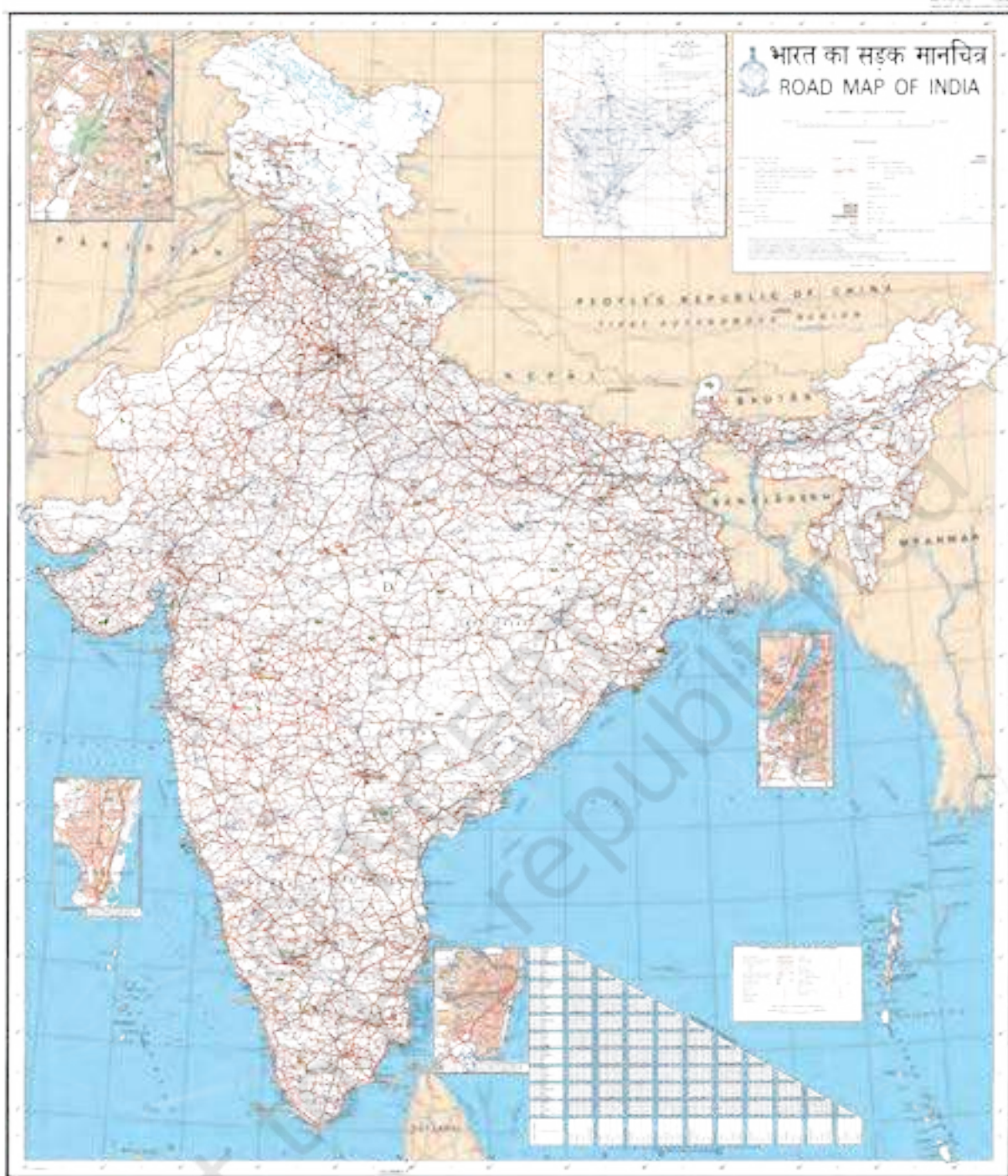


Fig. 7.4. Dense network of roadways in India

expressways are like super fast roads that join cities across states, and are built and maintained by the central government. They connect with other infrastructure like railway stations, airports, and ports so that goods and people can travel smoothly.



Fig. 7.5. Dhola Sadiya Bridge, Assam



Fig. 7.6. Living root bridge
(called jingkieng jri in Khasi), Meghalaya



DON'T MISS OUT

As of 2025, the length of India's national highways was around 150,000 km (Fig. 7.4) NH44 is the longest national highway in India at 4,112 km. It runs from Srinagar in the north to Kanyakumari in the south. In addition, the Golden Quadrilateral is an important highway network connecting four of India's major cities — Delhi, Mumbai, Chennai and Kolkata.

Highways cannot be built everywhere especially in difficult terrains like dense forests, wide river beds, and steep mountains. In such cases, bridges and tunnels enable ease of access. For instance, the Dhola Sadiya Bridge (or the Bhupen Hazarika Setu) connects Assam and Arunachal Pradesh across the Lohit River, a tributary of the Brahmaputra. At 9.15 km, it is the second longest bridge in India. Before it was built, people had to rely on ferries for travel, which did not work during floods. Now, the bridge provides year-round travel and has cut travel time by four hours. Farmers can take their vegetables and fruits to the market before they spoil, and people can access hospitals or medicines faster, even during floods.

Another infrastructure marvel closer to nature is the Meghalaya's living root bridges which are crafted by the indigeneous Khāsi and Jaintia tribes using the roots of the *Ficus*

elastica tree or the Indian rubber tree. They guide the roots across streams with bamboo and palm trunks, and over many years the roots grow stronger, twisting into natural bridges. Some take decades or even centuries to mature and can last for hundreds of years, standing 15–30 m high. These bridges are not just pathways but living and growing structures which have been nurtured over generations. They are a reflection of the knowledge that the local people have about Nature; these bridges have a cultural meaning too, connecting one generation to another.

b) Indian railway network

The British introduced railways in India in 1853 to transport raw materials like cotton and tea to ports for exporting them to Britain. Railways also helped British goods move across India

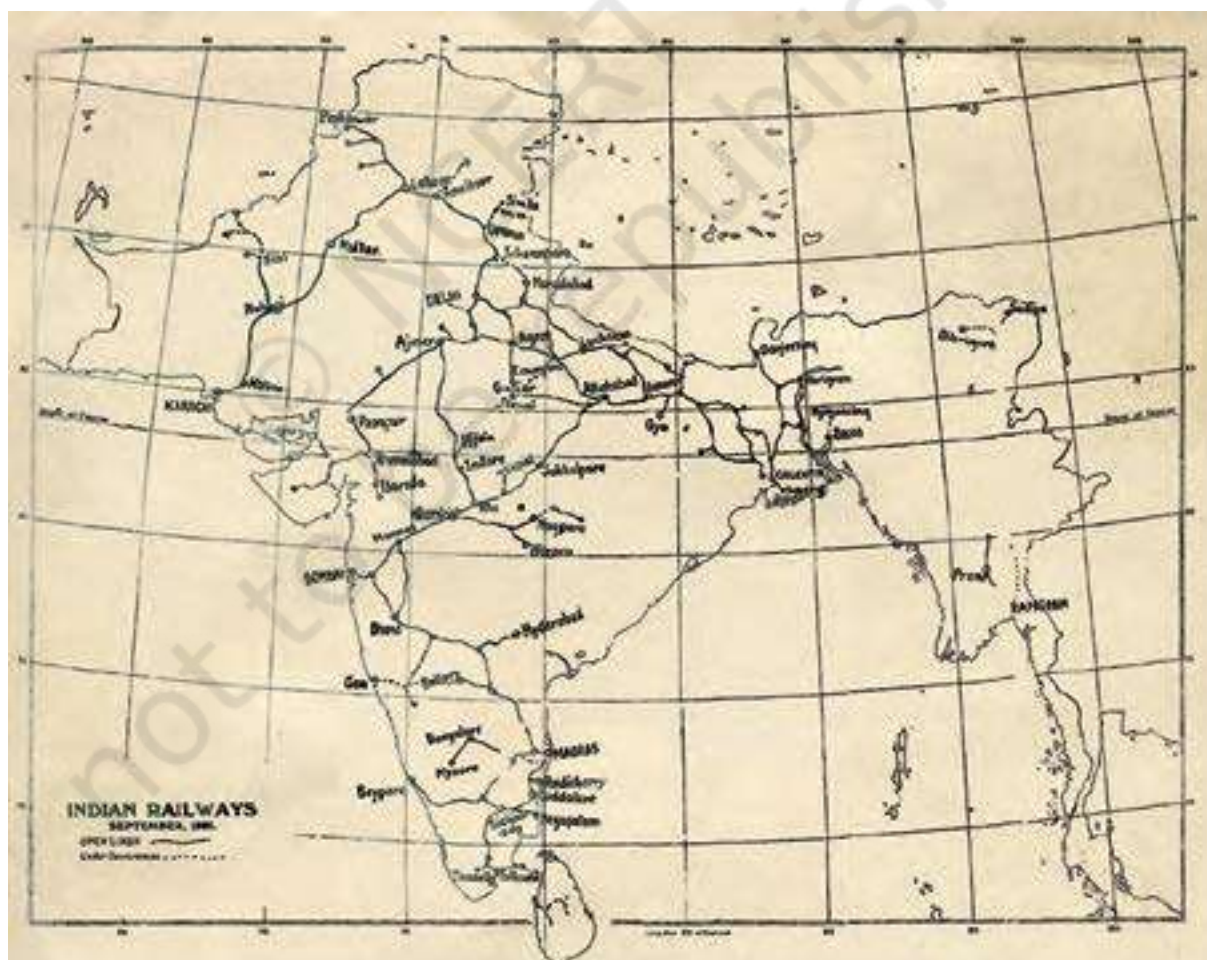


Fig. 7.7. Indian railway network during colonial rule 1882

and created a market for them. In addition, the system allowed the exploitation of resources and quicker movement of troops, which helped the British ensure tighter control over the vast Indian territory.

As the railway network expanded, trade grew, major markets developed, and new settlements emerged near stations. Railways became the lifeline for moving people and goods. Today, the Indian railways carry over 20 million passengers every day, and is one of the cheapest train services in the world. Cargo trains carry items like coal, grains, textiles, and electronics, using 75–90 per cent less energy than road transport. Earlier, trains used coal and diesel, which caused a lot of pollution. Now, India is aiming to have 100 per cent trains running on electricity by 2025, which is better for the environment, and a huge achievement for the country, see Fig. 7.8.

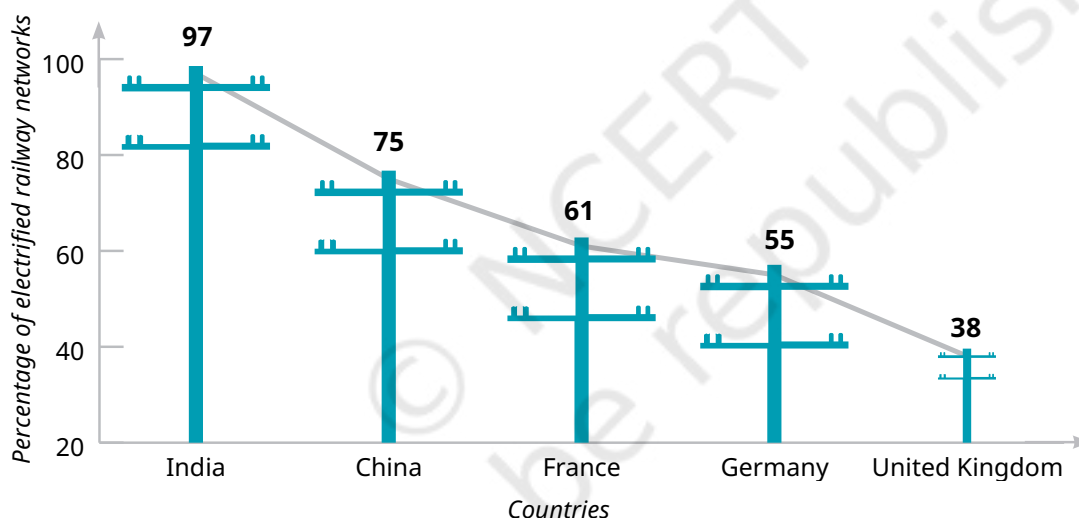


Fig. 7.8. Percentage of electrified railway networks — country comparisons, 2024

Indian Railways is also the largest employer with about 1.21 million employees in 2024, including engineers, ticket collectors, and service staff. Additionally, it also creates many indirect jobs like catering, vending, and taxi services.



Fig. 7.9. Food vending at a railway station

From 1853 to now, Indian railways have come a long way!
Today, Indian Railways is the fourth-largest railway system in the world.

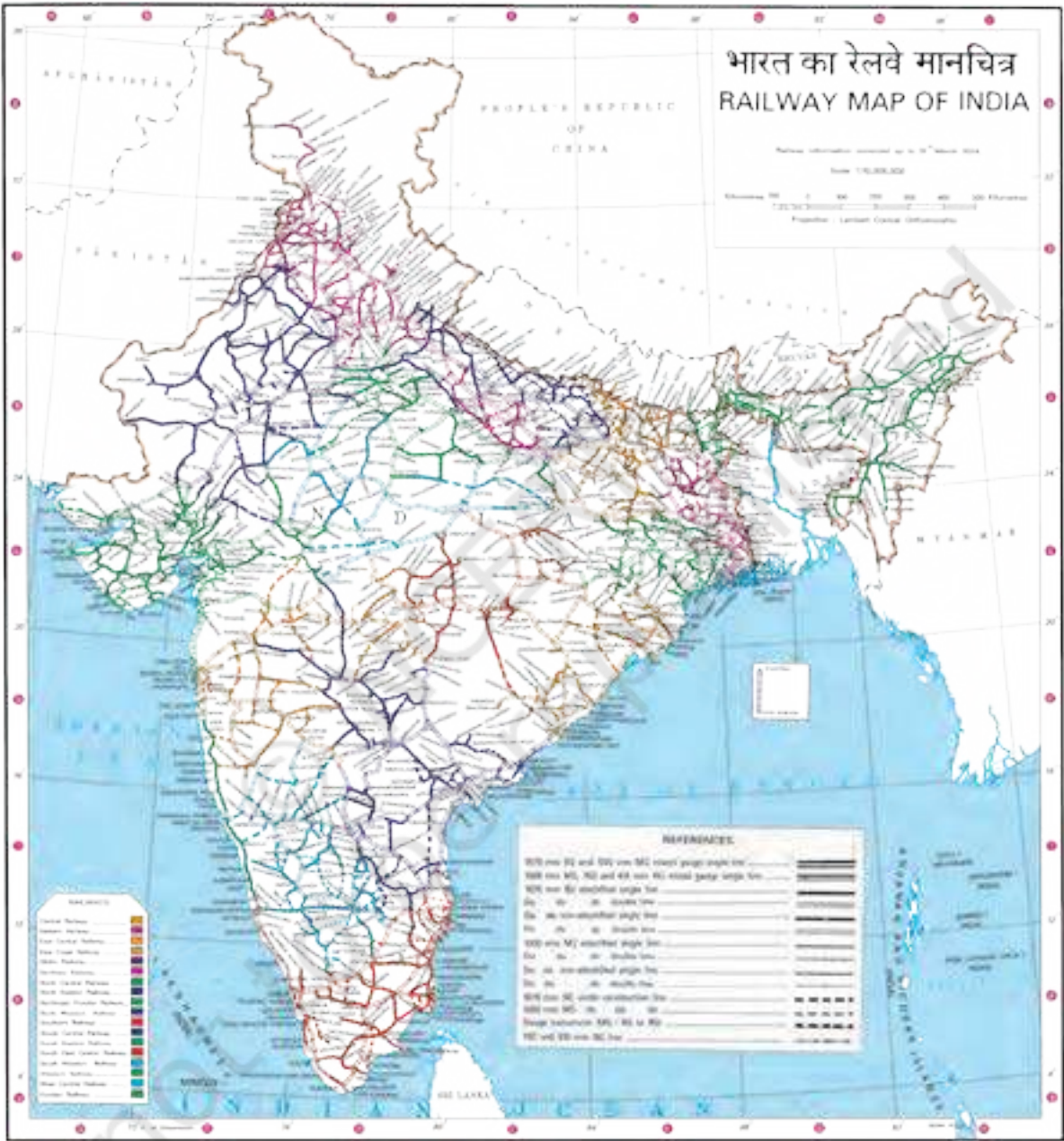


Fig. 7.10. Indian Railway Network, 2024

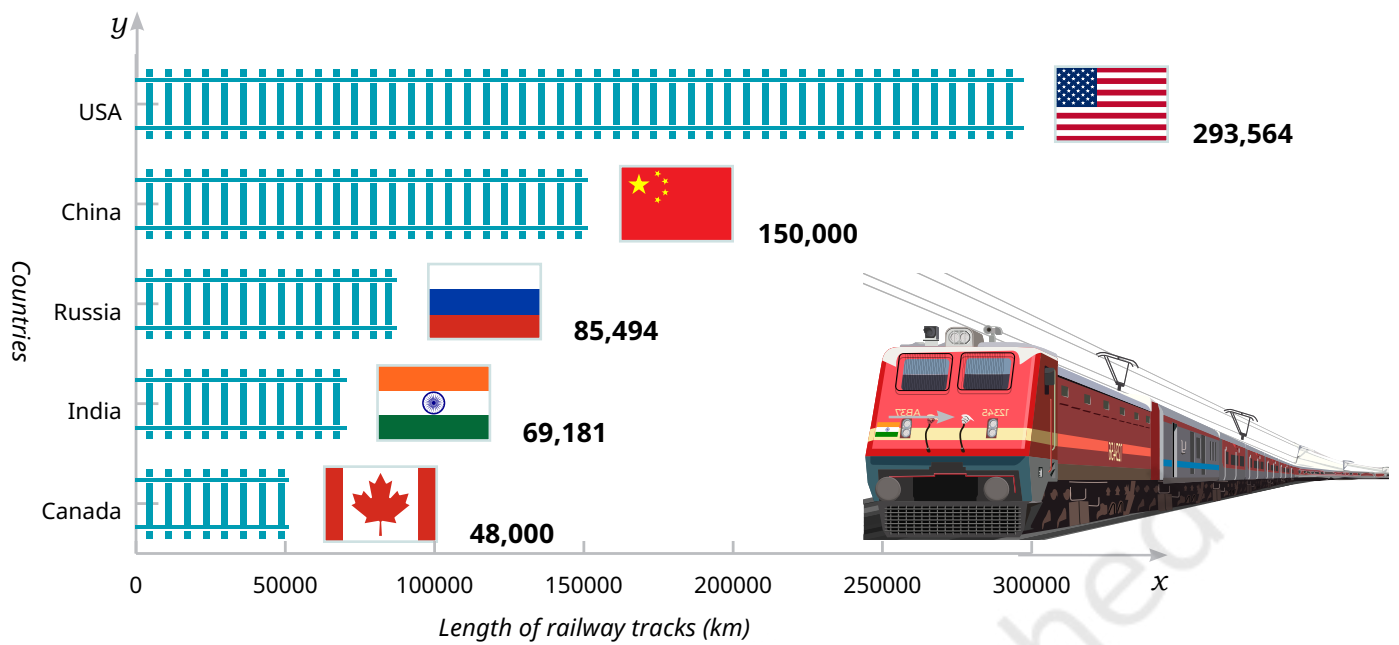


Fig. 7.11. Country-wise comparison — length of railway tracks (km) in 2024



Fig. 7.12. Timeline of development of trains in India

Economic Life Around Us
7 – Infrastructure: Engine of India's Development



Fig. 7.13. A metro train plying its route



Fig. 7.14. Commuters inside a metro train

c) Metro train systems

Metro trains operate in 23 Indian cities, with a total length of over 1,000 km. The network is expanding and soon India will have the third-largest network in the world, after China and the USA. They offer fast and reliable travel, easier daily commutes and help reduce road traffic. By running on underground and elevated tracks metro trains cut travel time, and also lower pollution by using cleaner fuels like electricity; some even use solar power, like the Delhi Metro.



LET'S EXPLORE

Have you or your family members ever taken a train or a metro? What sort of economic activities did you see around the stations? Share the experience with your classmates.

d) Air transport

Air transport is the fastest way to connect people and places within and across countries. Passenger flights carry people and cargo flights move high-value or perishable goods like vaccines, chemicals, seafood, etc. These are particularly helpful in delivering aid to people during disasters like floods or earthquakes as they can reach difficult terrains like high mountains, deserts, dense forests, and long oceanic stretches easily.



Fig. 7.15. Machinery for loading cargo into the airplane



Fig. 7.16. Passengers inside an airplane



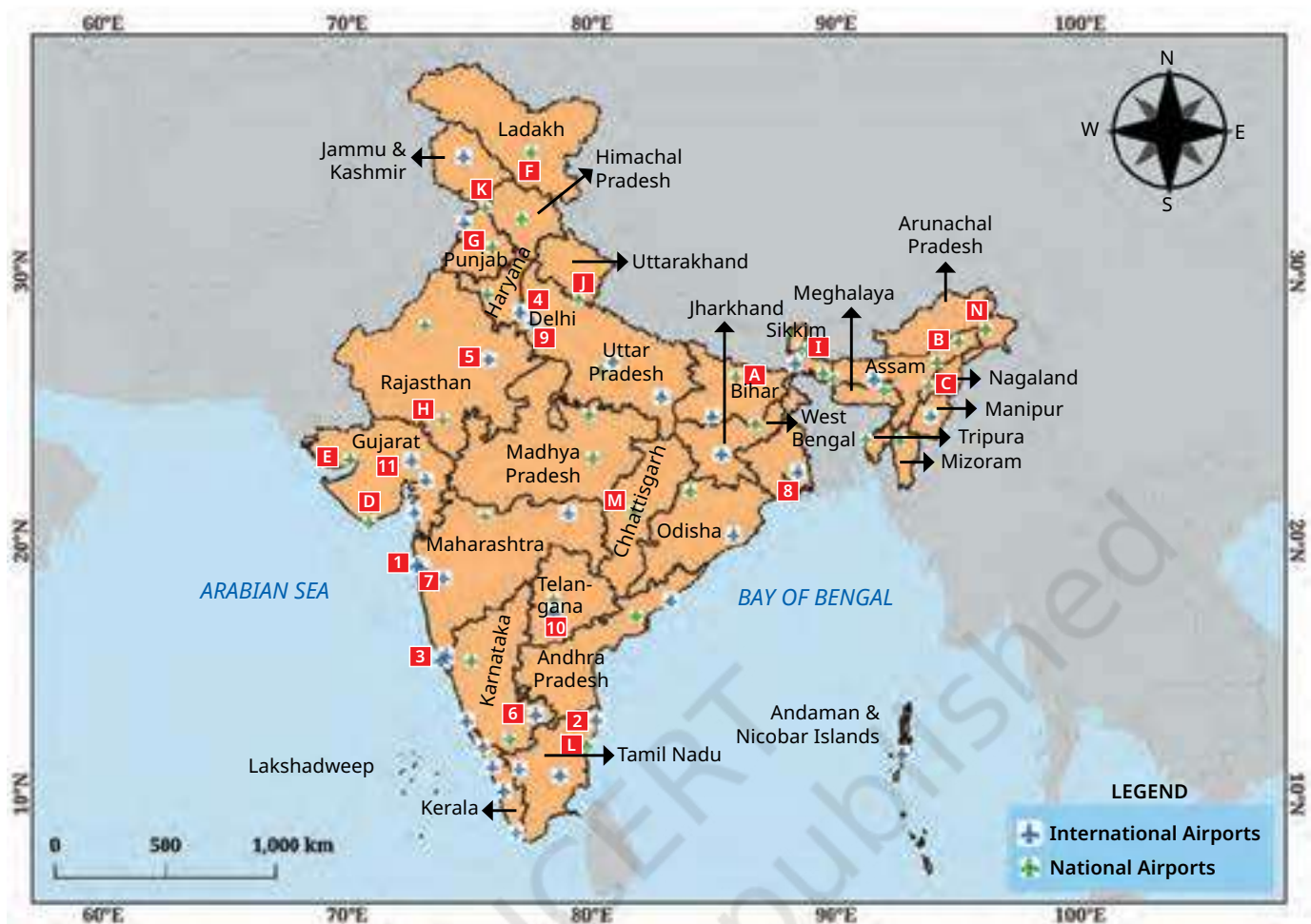
DON'T MISS OUT

- India has the third-highest domestic air traffic in the world, after the USA and China, and handled around 376 million passengers in 2024–25!
- Look at the Kempegowda International Airport in Bengaluru, Karnataka which is designed based on the concept of 'garden city'. It is adorned with bamboo structures, plants and vibrant green spaces while also adopting the latest infrastructure to serve passengers.



Fig. 7.17. Kempegowda International Airport, Bengaluru

In 2025, India has 159 airports. Look at some of the international and domestic airports in the map Fig. 7.18. Which airport is closest to your home?



LIST OF SOME NATIONAL AND INTERNATIONAL AIRPORTS (numbered in ■ on the map)

- | | |
|--|---|
| 1. Chhatrapati Shivaji Maharaj International Airport, Mumbai, Maharashtra | A. Darbhanga Airport, Darbhanga, Bihar |
| 2. Chennai International Airport, Chennai, Tamil Nadu | B. Dibrugarh Airport, Dibrugarh, Assam |
| 3. Dabolim Airport (Goa International Airport), Goa | C. Dimapur Airport, Dimapur, Nagaland |
| 4. Indira Gandhi International Airport, Delhi | D. Diu Airport, Dadra and Nagar Haveli, Daman and Diu |
| 5. Jaipur International Airport, Jaipur, Rajasthan | E. Kandla Airport, Anjar, Gujarat |
| 6. Kempegowda International Airport, Bengaluru, Karnataka | F. Kushok Bakula Rimpochee Airport, Leh |
| 7. Navi Mumbai International Airport, Navi Mumbai, Maharashtra | G. Ludhiana Airport, Ludhiana, Punjab |
| 8. Netaji Subhash Chandra Bose International Airport, Kolkata, West Bengal | H. Maharana Pratap Airport, Udaipur, Rajasthan |
| 9. Noida International Airport, Jewar, Uttar Pradesh | I. Pakyong Airport, Pakyong, Sikkim |
| 10. Rajiv Gandhi International Airport, Hyderabad, Telangana | J. Pantnagar Airport, Pantnagar, Uttarakhand |
| 11. Sardar Vallabhbhai Patel International Airport, Ahmedabad, Gujarat | K. Pathankot Airport, Pathankot, Punjab |
| | L. Puducherry Airport, Puducherry |
| | M. Swami Vivekananda Airport, Raipur, Chhattisgarh |
| | N. Tezu Airport, Tezu, Arunachal Pradesh |

Fig. 7.18. Some major airports of India



Fig. 7.19. Cargo Ship



Fig. 7.20. Vishakhapatnam Port, Andhra Pradesh

e) Shipping and ports

India's approximately 11,100 km of coastline is connected to regions like West Asia, Africa, and Europe, supporting trade through shipping. As a cheaper mode of transport, ships carry heavy goods like coal, cars, and cement over long distances. Ships dock at ports where goods are loaded and unloaded. India has 12 major ports and 217 minor ports. The volume of cargo handled has increased by 50 per cent in the past decade.

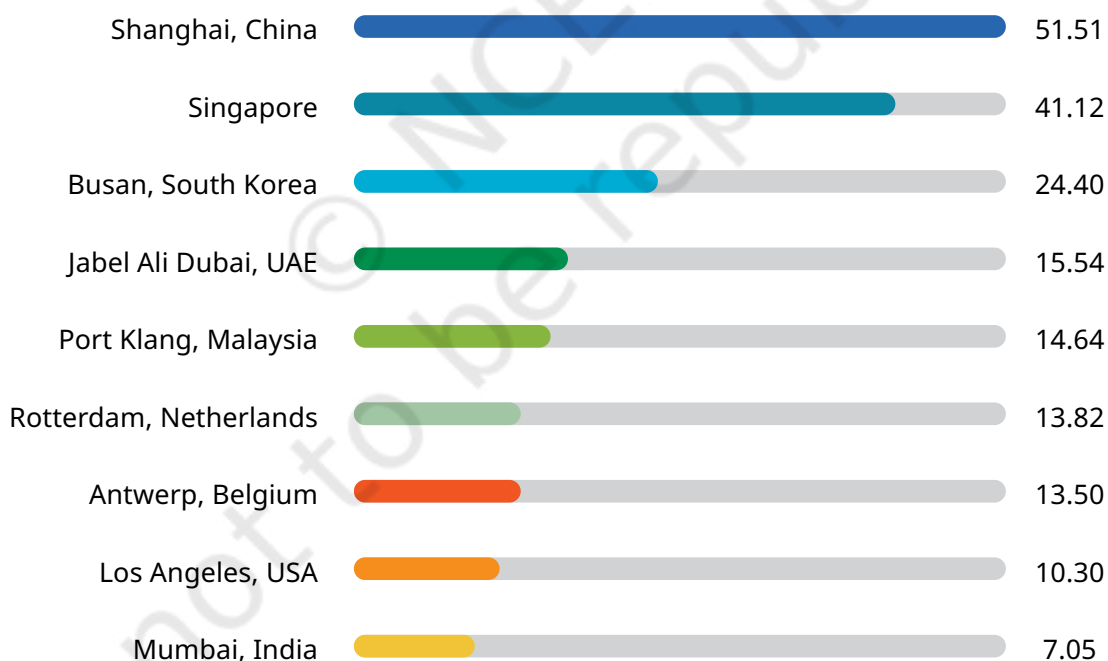


Fig. 7.21. Major container ports in the world by volume of trade (TEU) in 2024*
TEU stands for Twenty-foot Equivalent Units and measures the capacity of container ships and port activity. Generally, 1 TEU = 33 cubic metres.

*These numbers need not be memorised by the students.



Fig. 7.22. Major sea ports of India

Communications Infrastructure

Technology has transformed how we communicate, making it faster and easier through devices like phones, computers, and tablets. Behind this is a communication infrastructure, including cables, wireless devices, towers, satellites, and data centres, that enables transmitting messages, images, and videos. Let us see how communication evolved from slow, manual methods to digital systems with instant global connectivity.

When Rani, from a village in Madhya Pradesh, sends a voice note to her cousin in Tamil Nadu, it feels so simple — just tap, record, send. But have you ever wondered what magical journey that tiny message takes? It's not just the two phones. First, electricity powers the mobile tower near her village. Then, the message zips through fibre cables buried under fields and roads, gets

transmitted to satellites in space, and travels through giant servers buzzing in distant cities — before finally popping up on her cousin’s phone. A whole invisible world is working together just so one little *Namaste* can reach across India.



THINK ABOUT IT

Which parts of this process do you think are easiest to see in real life, and which are completely invisible?

Through the advancements in communication, students can access online classes, digital libraries, and educational videos, even in remote areas. It aids emergency response during natural disasters through quick mobile SMS alerts or apps. Small and large businesses sell products across the world through **e-commerce**. From quick online payments to **e-governance** where citizens can apply for documents, file complaints, or get information easily, progress in communication infrastructure has promoted ease of living for communities.

E-governance:

Use of communication technologies by government to deliver services to citizens. For example, the DigiLocker app to store documents like Aadhaar card and driving license online.

E-commerce:

Buying or selling products and services which are conducted on online platforms or over the internet.

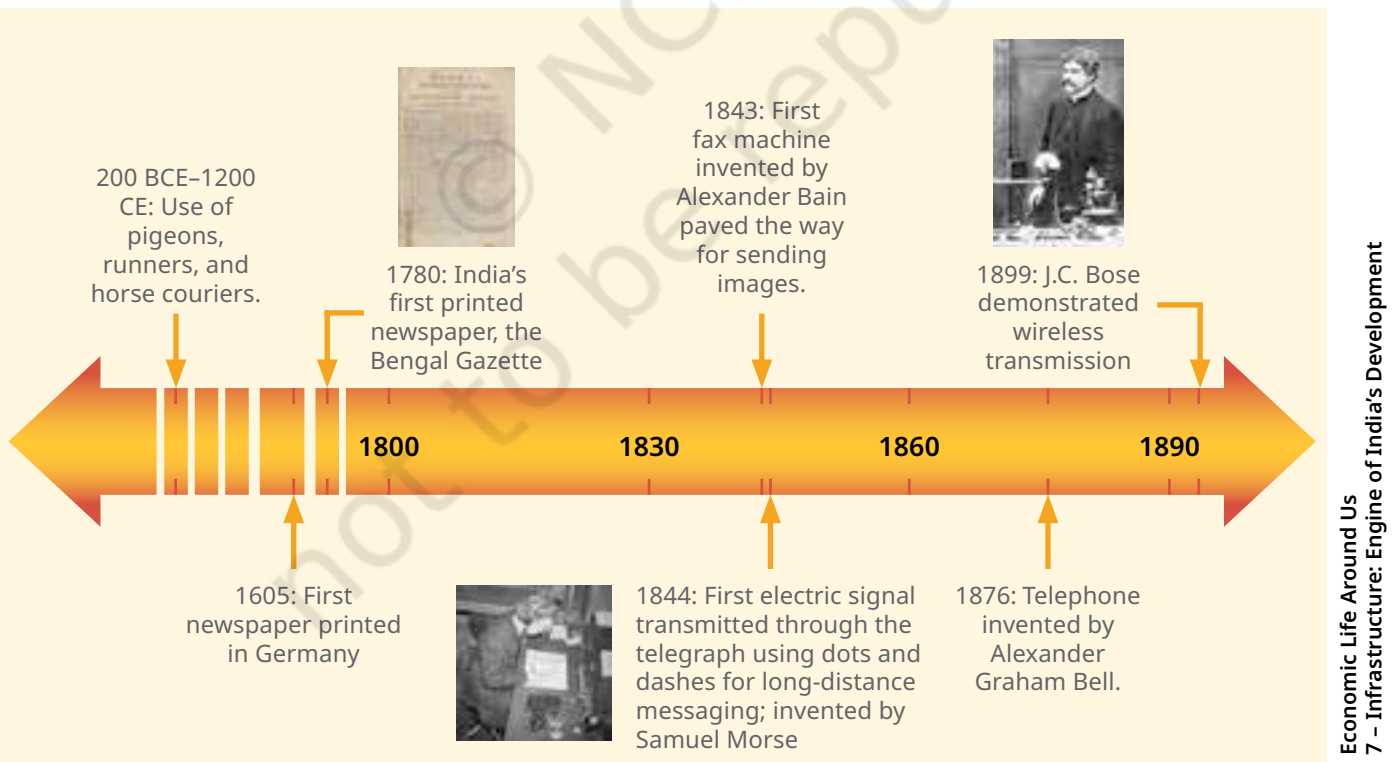


Fig. 7.23. Timeline of development of communication systems

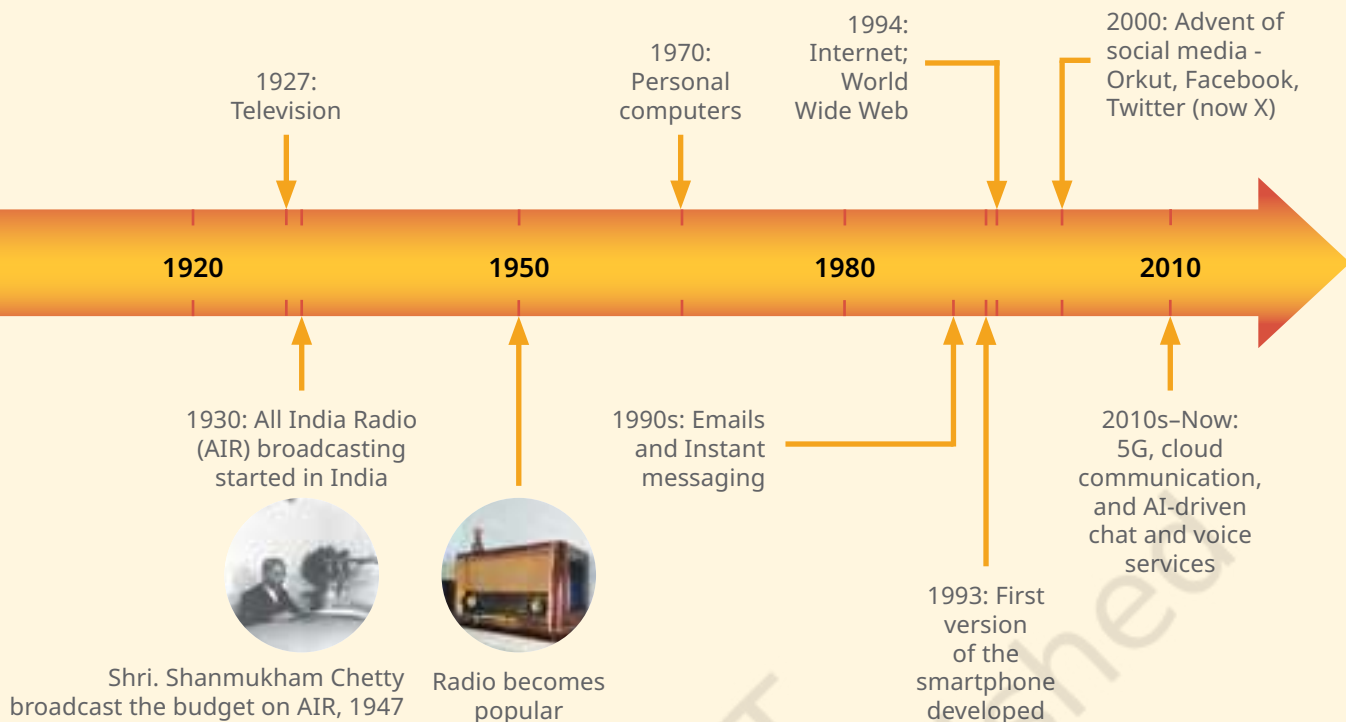


Fig. 7.23. Development of communications systems contd...



DON'T MISS OUT

J.C. Bose — The man who invented wireless transmission



Fig. 7.24. J. C. Bose

Jagadish Chandra Bose (1858–1937) was an Indian scientist who pioneered wireless transmission using microwaves in the millimetre range. In 1895, he showed in an experiment in Calcutta that signals could pass through a wall, using a bell and a remote-control gun. He also invented a new type of coherer, a key part of early wireless systems which decoded transmitted signals. Later, Guglielmo Marconi, an Italian physicist and inventor, **patented** a similar device in 1901 and, the same year, succeeded in transmitting a radio signal across the Atlantic; he won the Nobel Prize in Physics in 1909.

Patent:
A Right granted by the government or institutions to be the only person or company who can make, sell, or use the invention for a certain number of years.

Despite the challenging research conditions Indian scientists had to face at that time, J.C. Bose invented many devices, such as a galena crystal detector (galena is a common lead ore), which was an early type of semiconductor, antennas, waveguides, etc., but rarely bothered to patent his inventions. This did not help his inventions gain international recognition, although he received several honours, also for his pioneering research on plant physiology. He created the Bose Institute in 1917, which has promoted much research in physics, biology and environmental sciences.



THINK ABOUT IT

- In the 1990s, mobile calls in India cost up to ₹17 per minute, with charges even for incoming calls. Today, India has some of the world's cheapest mobile and internet rates. How do you think this became possible?
- In 2025, there are 1,160 million wireless telephone subscribers and nearly 900 million internet connections in India.
- Ask your family or people in the neighbourhood how they sent long-distance messages before mobile phones were introduced. What has been their experience of using the first telephone or mobile phone?

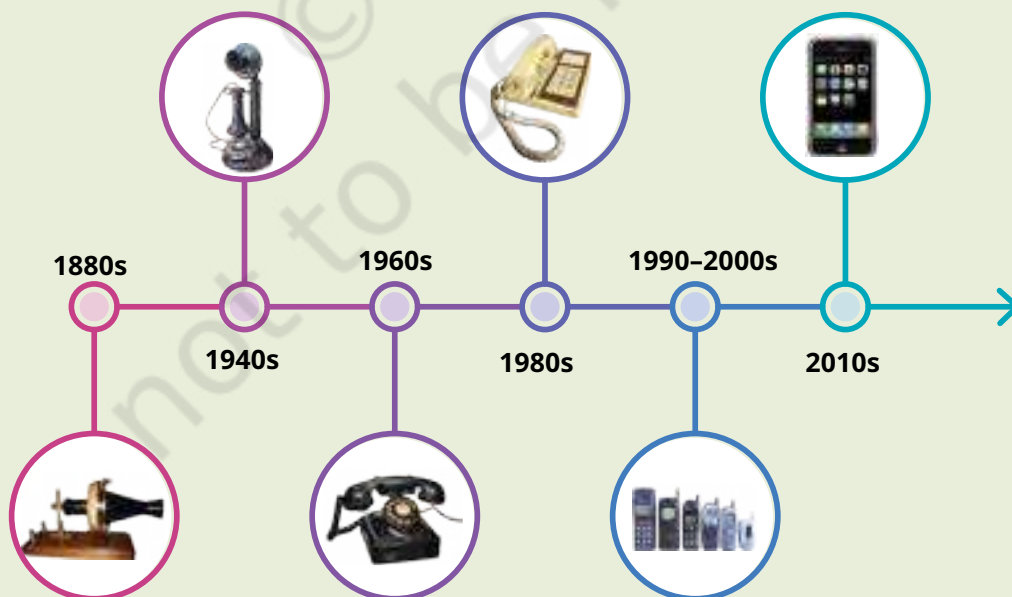


Fig. 7.25. Evolution of the telephone



THINK ABOUT IT

Do you see other types of infrastructure around you like schools, colleges, training centres, hospitals, health centres, police stations, fire stations, courts, parks, libraries, community centres and so on? This is known as social infrastructure. How do you think it supports the wellbeing and development of communities and society?

Collective Responsibility Towards Infrastructure

While India has developed major physical infrastructure in terms of airports, highways and so on, there still exist some challenges which need to be solved. We see roads being littered, stains on buildings, or writings on monuments. Such damage to public infrastructure reduces ease of living for people and becomes a burden for every citizen. Taking care of public infrastructure is a collective responsibility.

We also need to improve *Panchayat* and municipal administrative services for waste management, sewer systems, traffic management, provision of clean and safe drinking water, pedestrian-friendly footpaths. In addition, we need safe and sustainable infrastructure that uses cleaner energy and



Fig. 7.26. Poor waste management



Fig. 7.27. Potholes on the roads



Fig. 7.28. Using alarm systems when animals cross railway tracks



Fig. 7.29. Designing elderly friendly transport systems for smooth mobility

environment-friendly materials to minimise pollution and harm to bio-diversity — for instance, using solar panels for generating electricity for the buildings can reduce emissions. The design of the infrastructure should consider the needs of children, the elderly and disabled persons.

Infrastructure in the *Arthaśhāstra*

According to Kautilya's *Arthaśhāstra*, the state, *grāma*, and *sabhās* were actively involved in the development and maintenance of roads and waterways. For instance, the text mentions detailed regulations for the construction of roads, where the *janapadas* were to have roads of different widths based on the nature of traffic that connected towns, villages, and neighbouring countries. For example, royal highways, roads in the countryside, port towns, and roads leading to villages should be 16 m wide. Forest roads and roads within the city should be 8 m; chariot roads should be 2.5 m in width, and so on (measurements simplified to the current metric system).

It also deterred damage to the physical infrastructure by recommending punishments and fines for individuals who violated the rules. For instance, it suggests a severe penalty for those damaging waterworks, such as breaking the dam of a reservoir, and fines for trespassing into public parks by breaking the hedge, and for obstructing paths to waterworks and forests.

While the government can impose penalties to deter damage to infrastructure, the role of citizens is equally important in maintaining it. Individuals need to use it responsibly and report any damage to the authorities such as in case of potholes or broken streetlights.



LET'S EXPLORE

- Create a 'Community Responsibility Pact' on the board or as a poster. Come up with ideas on how individuals can develop a sense of responsibility towards public infrastructure.
- Can you think of ways in which infrastructure can become more sustainable around you? For example, what changes would you make to your school to make it more eco-friendly?
- Write down a list of five problems you have observed and their possible solutions on a sheet and discuss in class.



Before we move on ...

- Quality infrastructure is the backbone for all other economic activities taking place in a country. This enables better connectivity, employment opportunities for people and enhances ease of living.
- Over time, India has witnessed phenomenal growth in physical infrastructure, and it is the duty of every citizen to preserve and maintain it.

Questions and activities

1. Which form of physical infrastructure has been built in your area in the last decade? How do you think it has benefitted you or your family members? If you could build something for the community, what would it be?
2. How does infrastructure like ports, highways, and airports create jobs in different parts of the country? Can you think of indirect ways people benefit from it?
3. Why is it important to think about the environment when building new infrastructure like roads or airports? Can infrastructure development and environmental protection go hand in hand? If yes, how?
4. How can better infrastructure (like roads, airports, communication systems) help during natural disasters like floods or earthquakes?
5. Have you ever noticed people misusing public spaces, like scribbling on walls, breaking streetlights, or damaging benches? What are its consequences? Write your observations and suggest solutions to prevent it.
6. Prepare 'scenario posters' for the following situations:
 - A new factory is planned in an area. What form of infrastructure is required for its smooth operation?
 - Self-cleaning roads, underground highways, and high-speed bullet trains could be part of a futuristic city! Imagine the kind of infrastructure that would be required in the future that could help ease the lives of the people and communities in your city, town or village for various day-to-day functions.
 - Think about upgrades to the infrastructure near you, considering the terrain of your area, such as coastal, mountainous, plains, etc., and the type of natural calamities your region is prone to.

- If you could design a new railway or metro station, what would it look like and what features would you add to make it more fun and comfortable for the passengers?
7. Today's modern infrastructure requires consistent technological innovations. For instance, electric vehicles are increasingly being used by people as a cheaper alternative to polluting fuel like diesel or petrol. Find out about other innovations in infrastructure that can improve ease of living or mobility for communities.

Banks and the Magic of Finance

CHAPTER

8



The banker is not only a middleman; he is the producer of a vital service, enabling entrepreneurs to transform ideas into reality through credit.

– Joseph Schumpeter, Economist



The Big Questions ?

1. What is financial infrastructure, and what does it comprise?
2. What are the main functions performed by banks and how do they impact people's lives?
3. How does financial infrastructure contribute to a nation's progress?



Fig. 8.1.



Bank:

A financial institution that collects money from people in the form of deposits and lends money to people or borrowers as loans.

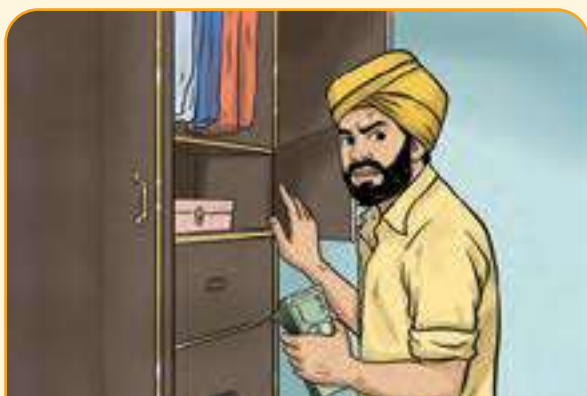
In the previous chapter, we learned about India's physical infrastructure, like roads, railways, and telecommunication, which support economic activities driven by money-related transactions. Do you recall the flow of money from shopkeepers to workers as salaries, who further spent it on essential items (chapter 'From Barter to Money' in Part 1 of Grade 7 textbook)? How do these monetary transactions take place between people? Also, how is the development and maintenance of the vast physical infrastructure funded?

This is made possible by introducing financial infrastructure — a network of **banks**, payment systems, stock markets, and other financial institutions that help people, businesses, and the government facilitate financial transactions and manage money. Let us find out more about them.

LET'S EXPLORE

Fig. 8.2. Bank

This picture is from a bank. What do you think the people are doing? Ask your family members if they have visited a bank and learn more about the activities there.



Navdeep saves ₹3000 from his salary every month. Saving all that money in his cupboard might not be safe.



So he decides to deposit the money in a bank.

Fig. 8.3. (a) Navdeep makes a deposit

Rima runs a business making bamboo products. She needs some money for a few business operations.



When friends and family couldn't help as much as required, she decides to take a loan from the bank and repay it later.



Navdeep deposits his surplus money with the bank, and the bank provides Rima with the remaining amount she needs for her business as a loan.

Fig. 8.3. (b) Rima takes a loan



THINK ABOUT IT

- Why does Navdeep think that saving at the bank is better than keeping cash at home?
- Can Navdeep and Rima lend to each other directly without the bank? What could happen in that case? Discuss.

Deposits:
Money placed in a bank account that can be withdrawn as per the terms of the bank and often earns interest.

What are banks and what do they do?

Banks help make monetary transactions easy by offering services such as saving, withdrawing, and borrowing money. These services are used by a wide range of people, including farmers, shopkeepers, nurses, and also businesses and institutions. To use the services of a bank, one first needs to open a bank account. The person or business is then called a bank account holder, and the bank offers them several services. Let us learn about these services.

Hold deposits

A bank accepts and holds money (**deposits**) that people put into

Banks provide the following types of accounts:

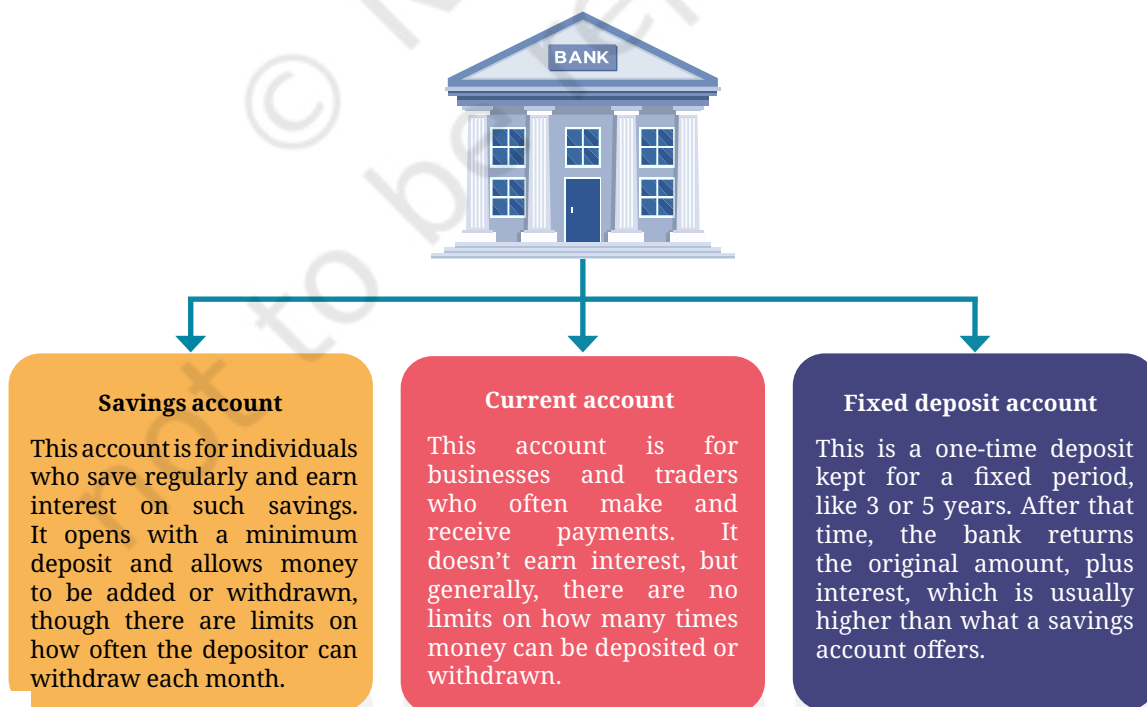


Fig. 8.4. Types of bank accounts

the bank account. They not only keep it safe for us but also lend it to businesses or other people. In return, the banks give us some extra money over a regular period (say **quarterly** or monthly or annually) in the form of '**interest**', which helps the amount of our money saved to grow over time. Through this, banks encourage individuals to save.

Let us understand how your savings would significantly increase if you save for a long time.

Imagine you get ₹1000 on your birthday from your mother. You take it to a bank and deposit it in your account. The bank pays 6% interest on this amount each year if you don't withdraw it. At the end of one year, you will have:

Original amount + one year's interest, i.e.,

$$\begin{aligned} & ₹1000 + 6\% \text{ of } 1000 \\ &= ₹1000 + (6/100 \times 1000) = ₹1000 + 60 = ₹1060. \end{aligned}$$

If you don't spend this money next year as well, you earn interest on ₹1060, not just ₹1000, which is 6% of 1060 = ₹63.60.

So, the total money at the end of the second year would be:

$$1060 + 63.60 = ₹1,123.60$$

So, you earn an interest not just on the original amount of ₹1000 but on the amount including interest earned in previous years. As you can see, the interest earned in subsequent years increases, from ₹60 in the first year to ₹63.60 in the second year, and so on. This process of earning interest on previous interest is known as **compounding**. If you continue saving for 12 years, your money will grow to ₹2012.20. This highlights how compounding is a powerful financial concept that helps your money grow exponentially over time.

Quarterly:

It means occurring four times a year, at the end of every three months.

Interest:

It is the amount charged for borrowing money or the amount gained by lending money, which is usually expressed as a percentage.



Fig. 8.5. Money grows due to compounding

The Magic of Compounding – The story of a King and a Sage

A king from Ambalappuzha, Kerala, known for his love for chess, once challenged a visiting sage to a game. The king offered any reward to the sage if he defeated him. However, the sage asked for a simple reward — one grain of rice on the first square of the chessboard, two on the second, four on the third, doubling each time for all 64 squares. The king was surprised at the sage's small demand and agreed. But he lost the game to the sage and asked his courtiers to place the rice grains on each square of the chessboard as promised. The eighth square had 128 grains, which was the last square of the top row. The ninth square had 256 grains, the 10th had 512, the 11th had 1024 and so on. But as the grains kept doubling, the total grew significantly. By the 16th square, it was already 32,768 grains, and by the 32nd square,



Fig. 8.6.

over 210 crore! The king realised how powerful exponential growth can be — but only after paying a heavy price. This story shows how compounding works, and how small amounts can grow into large sums over time!



THINK ABOUT IT

- How does one track so many transactions of deposits and withdrawals? The bank provides a diary-like document called a passbook that keeps a record of all the receipts and payment transactions. This can be updated regularly at the bank.
- Look at the passbook in Fig. 8.7. Observe all the particulars under outflow of cash (**debit**) for the expenses and inflow of cash for (**credit**) income. Why is keeping records of financial transactions important? Discuss in the class.

Debit:
Taking
money
out of an
account

Credit:
Receiving
money
in an
account

DATE	PARTICULARS	CHEQUE NO	DEBIT	CREDIT	ODD BALANCE
13.11.25	TRF/company salary account			10000.00	15000.00
17.11.25	TRF/12b2/payment of rent	10521	6000.00		9000.00
20.01.25	UPI/04/legal cinema		1500.00		7500.00
29.01.25	UPI/08/coffee house		400.00		7100.00
03.02.25	Cash deposit self			500.00	7600.00
15.02.25	200 Charges		12.00		7588.00
31.03.25	Interest credit			1327.00	8915.00

Fig. 8.7. Entries in a passbook

Offer loans or credit

Banks lend money to borrowers as **loans** for specific purposes such as buying a house or vehicle, funding education, etc. Businesses borrow money for purchasing new machinery and raw materials, transporting products, launching new products in markets, among other purposes. Just as banks pay interest on savings to depositors, they charge interest from borrowers on the loans they provide. After a specified period, the borrower repays the loan amount, along with the interest charged by the bank.

Loan:

An amount borrowed from banks or financial institutions, with the obligation to repay it with interest at a later time.



DON'T MISS OUT

The banks pay lower interest rates on savings deposits to depositors and charge a higher interest rate on loans from borrowers. This difference in interest rate is a source of income for the banks. Let us understand this through an example.

Anand deposits ₹200 in his bank account, and the bank offers an interest rate of 2% on his savings. The bank lends the amount of ₹200 to Shreya and charges an interest rate of 5%. Shreya repays the amount of ₹10 (5% of ₹200) as interest on loan along with the original loan amount of ₹200, making the total ₹210. The bank pays ₹4 (2% of ₹200) to Anand as interest and earns ₹6. It is important to note that the banks have reserve money and do not lend all the deposits as loans to individuals or businesses.

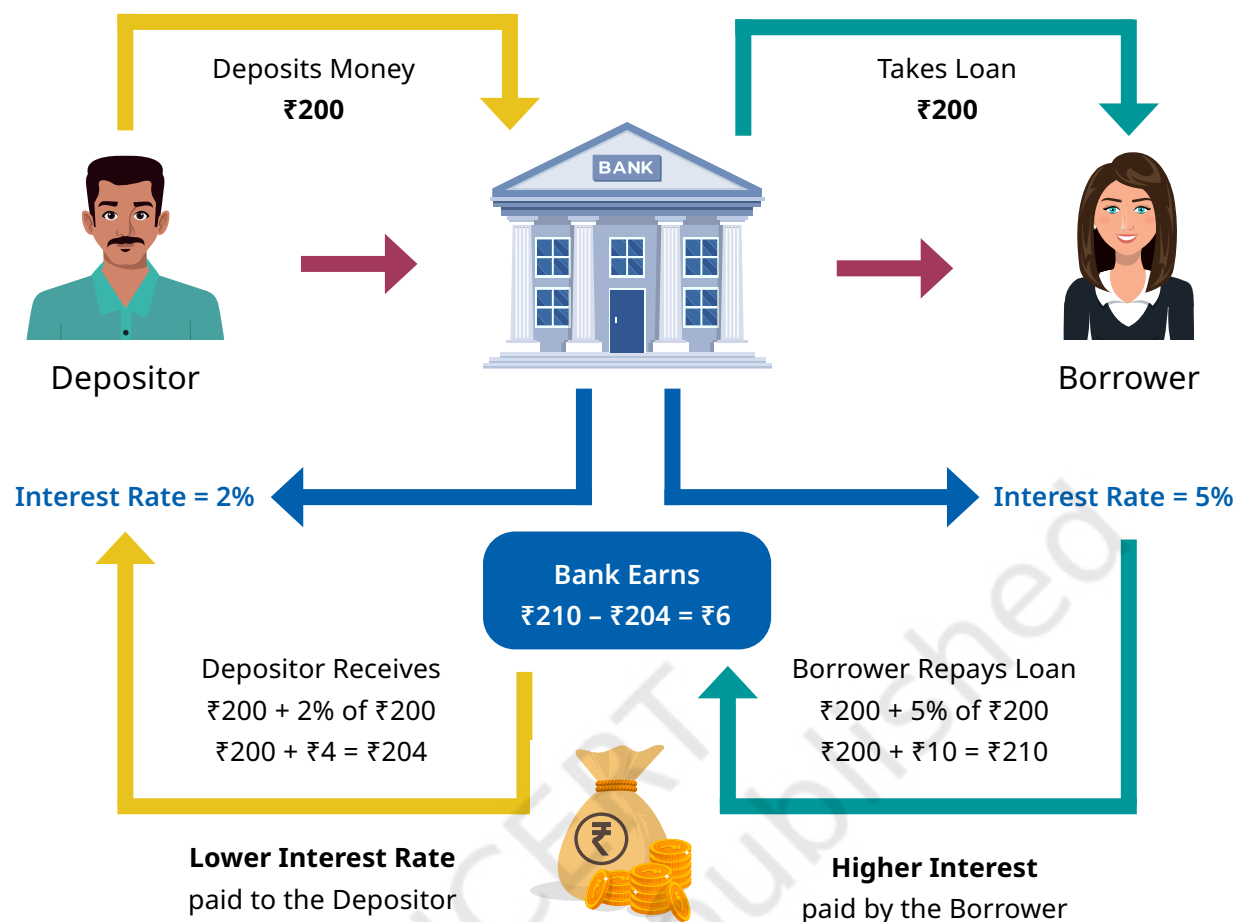


Fig. 8.8. Simplified diagram to illustrate how banks make money

How the Jan Dhan Yojana revolutionised banking in India

Before 2014, only 15 crore Indians had bank accounts, with most relying on cash. The Pradhan Mantri Jan Dhan Yojana, launched in 2014, aimed to give every Indian, especially low-income earners, access to a bank account without requiring a minimum balance or fees. Since then, over 50 crore accounts have been opened — mainly by women. Now, banking services are used by people from all walks of life. For instance, farmers borrow money to start a small business or expand their agricultural activities. Workers receive their wages directly into their bank accounts, and students who perform well academically receive scholarships from institutions into their accounts. Such direct transfers have reduced middlemen and ensure the timely disbursement of funds.

Other Financial Institutions

Apart from banks, Indian post offices offer a variety of financial services, including savings schemes such as National Savings Certificates (NSC), Kisan Vikas Patra accounts, and Sukanya Samriddhi accounts. Their vast network and presence, even in remote locations, make them a popular savings option.

There also exist other financial institutions that support specific sectors. For example, the Industrial Finance Corporation of India funds businesses in areas like power and textiles. National Bank for Agriculture and Rural Development (NABARD) supports rural development by funding banks that give loans for farming, village industries, and infrastructure like roads and irrigation.

With numerous banks and financial institutions, it is essential to have clear rules and regulations that everyone follows. But who sets these regulations?



Fig. 8.9. Post office

Reserve Bank of India – Banker to Banks

The Reserve Bank of India (RBI) is the bank that supervises the Indian banking system. It is also called India's central bank. Several countries have central banks which supervise and manage policies related to their banking system.

RBI was established in 1935 and performed some of the functions of a central bank. After Independence, the RBI was transferred to the Government of India, and has been functioning as the banker of banks, the central bank, since 1949. It maintains accounts of other banks and facilitates exchange of funds between them. It also provides loans to banks and the government.



Fig. 8.10. Entrance of RBI office in Delhi

Benchmark interest rate:

The base interest rate that the RBI fixes for lending money to commercial banks.



THINK ABOUT IT

→ In ancient India, temples acted like banks. Although they did not accept public deposits like modern banks, they lent money to artisans, merchants, and the local government for building infrastructure. Contracts between the temples and the concerned party were etched on copper plates. These have survived to give us a glimpse of how they functioned.

→ One such example is an inscription from Kodumbalur in Tamil Nadu, dating back to the 13th century, which refers to communities that borrowed money from the Tirumudukunramudaiya-Nayanar temple with an agreement to pay interest.



Fig. 8.11. Copper plates with inscriptions, Pandya Kingdom.

RBI sets rules and regulations regarding —

- Printing and distributing Indian currency like banknotes
- Fixing of the **benchmark interest rates**

Interestingly, the entrance of the RBI office in Delhi is flanked by the statues of a *yaksha* and *yakṣiṇi*. According to Hindu mythology, *yakṣhas* belong to a

class of demigods who act as the guards of treasures for Kubera, the God of Wealth. RBI could be compared to Kubera, with its sole right of issuing currency and by being a banker to banks!

Payment Modes and Systems

Payment modes and systems are another key part of the financial infrastructure. They help with the transfer of money from one person to another. Some of the modes of payment include cash, cheques, and debit cards. However, **payment systems**, such as the Unified Payments Interface (UPI), have become popular as a quick and convenient way to transfer money today. Let us learn more about them.

But first, let us understand how account holders can withdraw cash from bank deposits.

Generally, savings can be withdrawn from the bank account through multiple methods —

- i. One can fill out a withdrawal slip at the bank, submit it at the cash counter, and withdraw cash at the bank from their account. You can try filling one for yourself at the end of this chapter!
- ii. Banks also provide debit cards to customers when they open an account. Debit cards can be used to withdraw cash from Automated Teller Machines (ATMs) at any time. These self-service machines are like mini-banks, available 24×7 at public places like bus depots, local shopping markets, railway stations, airports, malls, etc. To withdraw cash, one has to insert their debit card into the machine and input the **PIN (Personal Identification Number)** and the exact amount to be withdrawn.



Fig. 8.12. Debit cards
(front and back sides)

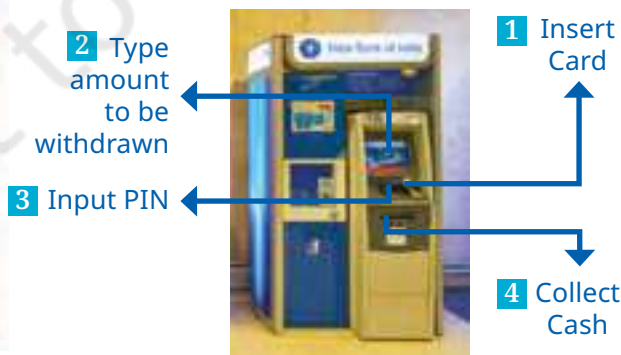


Fig. 8.13. ATM

Payment system:

A mechanism that facilitates the clearing and settlement of financial transactions, allowing individuals, businesses, and organisations to transfer funds between each other.

PIN:

A numeric code (usually 4 to 6 digits) used for authentication and security in various applications, especially for financial transactions like ATMs, debit cards, etc.

How can money be transferred from one bank account to another?

Cheque

A cheque is a paper instrument that allows you to pay someone directly from your bank account. The bank provides a cheque book with multiple cheques. To pay ₹5,000 to your friend Rohan, you write a cheque with the exact amount, Rohan's name, and your signature. Rohan can then deposit the cheque in his bank. The amount gets withdrawn (debited) from your account and is transferred (credited) to Rohan's bank account.

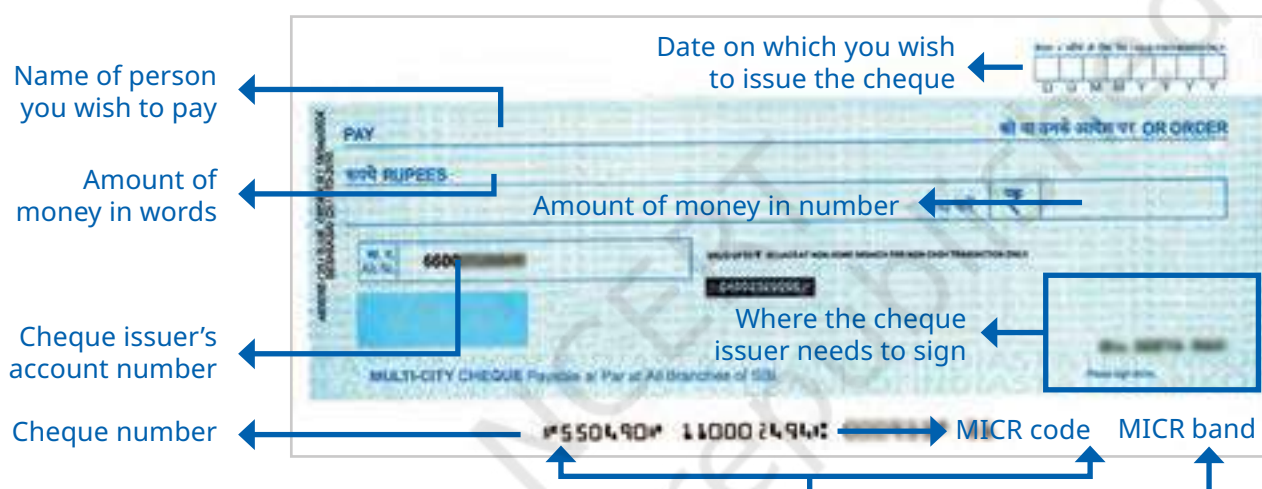


Fig. 8.14. Cheque

The transfer or payment of money through a cheque requires physically visiting a bank and takes time. However, electronic modes of payment allow instant transfers from the sender's account to the receiver's account. These are called electronic payment methods, some of which are discussed below.

Debit cards and Point of Sale (POS) machines

Debit cards can be used to make payments at retail stores such as a grocery or clothing store, and chemist. On one hand, they help withdraw cash from ATMs as seen above, and on the other hand, they enable the transfer of money from customers to the store owner. Customers use their debit card by swiping or inserting it into a POS machine, inputting the amount, and entering the

PIN. The cashier can also enter the amount, while the customer enters their PIN. The amount is instantly deducted from the customer's account.

Internet Banking (Netbanking)

Another electronic tool for transferring money is internet banking or online banking, which allows account holders to check balances and transaction history, and transfer money, through the bank's website or mobile application using a computer or smartphone.

Mobile payments

Additionally, digital payments are made through mobile phones using digital payment applications such as BHIM (Bharat Interface for Money), which is based on the Unified Payments Interface (UPI) payment system. UPI enables easier and quicker digital money transfers using a QR code or the phone number of the recipient, allowing quick payments and receipts. It reduces the need for physical passbook updates. It allows users to check balances and track transactions anytime on their phone.



Fig. 8.15. Debit card being used in a POS machine



Fig. 8.16. Internet banking using a computer



Fig. 8.17. QR code used for payment

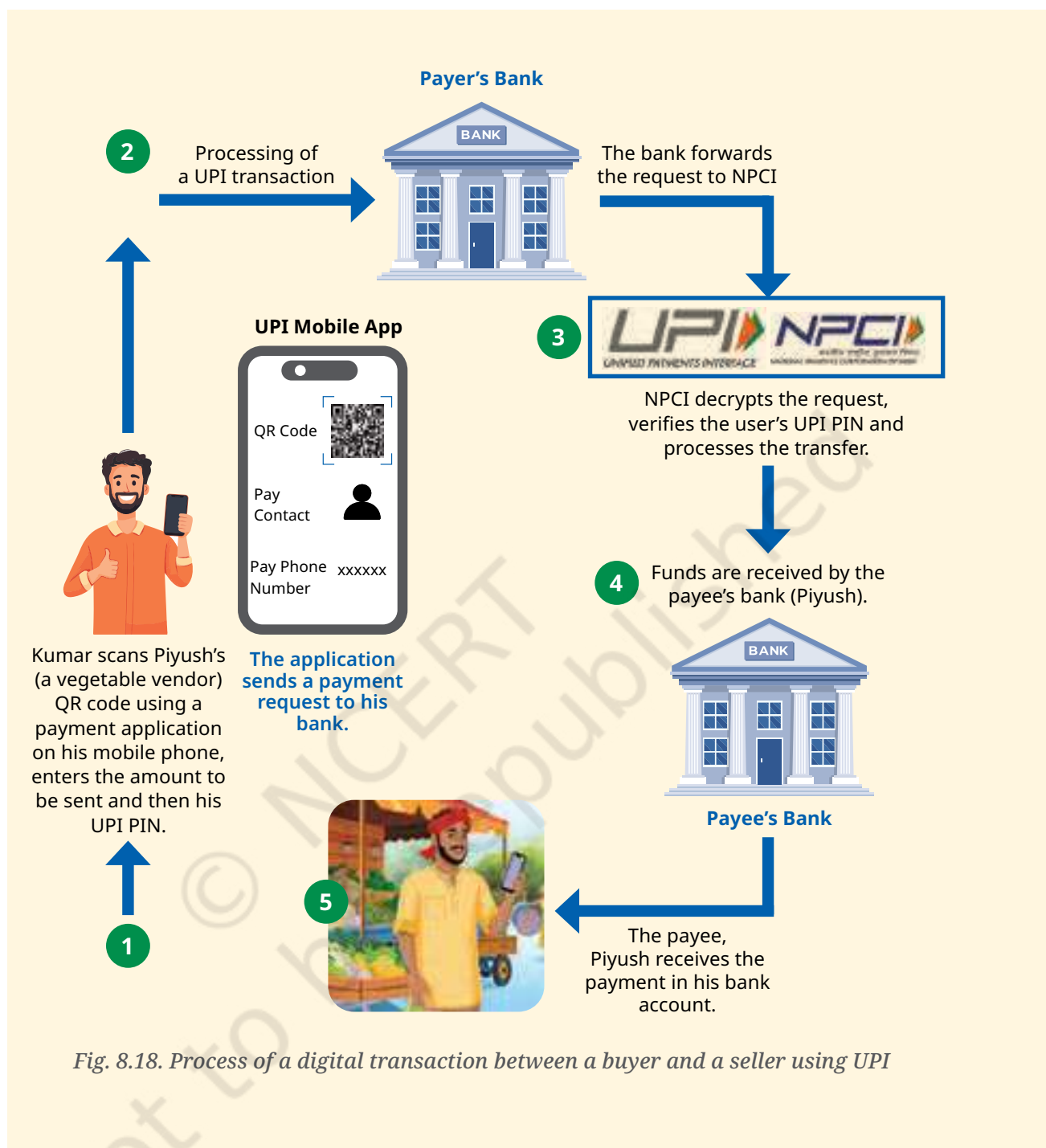


Fig. 8.18. Process of a digital transaction between a buyer and a seller using UPI

Unified Payments Interface (UPI) — India's gift to the world of payment systems

Traditionally, transferring funds from one person's bank account to another person's account required filling out the cheque with the details of the receiver, dropping it into the bank's drop box or handing it over to a bank official. It was time-consuming and

discouraged a majority of people from using banking services, leading to heavy reliance on cash due to which billions of rupees were used every day without a record.

This system changed in 2016 when the National Payments Corporation of India (NPCI) launched UPI, a fast and secure digital payment system that enables transfer of funds. See Fig. 8.18 to learn more about this with an example.

Did you notice how effortlessly UPI allowed a digital transaction between Kumar and Piyush? You may remember that during the COVID-19 pandemic, maintaining social distancing became essential to prevent the spread of infection. During this period, UPI gained popularity for supporting cashless transactions. Moreover, its user-friendly design in multiple languages makes it accessible to everyone.



THINK ABOUT IT

India's digital payment revolution is expanding rapidly across borders. Nepal was the first country to adopt India's UPI as a payment platform in 2022. Today, nations such as the United Arab Emirates, France, Sri Lanka, Bhutan, Mauritius and so on have adopted it, and more countries are increasingly showing interest. This instant, efficient and secure system is truly India's gift to the world of payment systems!

Stock Market

Previously, you learned about various markets like retail, wholesale, online and so on. Imagine the stock market like a giant online book store — but instead of buying books — people buy and sell **shares**.

Suppose you own a small restaurant and wish to expand it with a variety of cuisines. However, if you do not have enough money, you can borrow it from friends in exchange for a share of profits, for which they become part-owners of your business. Similarly, a 'share' is a part-ownership in a company. So, when you buy a share of a company, you become a part-owner of that

Share:

A share is a unit of ownership in a company, representing a portion of its capital stock.

Investment:

The act of putting resources in assets expected to gain value over time.

company due to your **investment**. The more shares you own, the higher your ownership. If a company is like a big chapati, its each share is one piece. A collection of shares can be referred to as a stock. Holding stocks allows individuals to put their savings where they expect to see an increase in their value when the share price increases; on the other hand, issuing shares help companies raise funds for their operations.



Fig. 8.19. Bombay Stock Exchange

The actual buying and selling of shares takes place at the **stock exchange**. In India, the Bombay Stock Exchange (BSE) was established in 1875 and is one of the oldest stock exchanges in the world. Back then, the share transactions

Stock exchange: Marketplace where financial securities like stocks are traded.

were conducted manually using papertickets (Fig. 8.20), which in the modern world have been replaced by digital transactions using advanced computers and other devices.

Like commodity prices, share prices also rise and fall. When the share prices of many companies fall simultaneously, it results in a stock market crash. On the other hand, a rise leads to a stock market boom.



Fig. 8.20. Share certificate in earlier days



Fig. 8.21. A rise in the prices of shares of a large number of companies causing a stock market boom



Fig. 8.22. A fall in the prices of shares of a large number of companies causing a stock market crash

Trading shares can bring gains or losses, as their prices fluctuate due to many factors.

If a company is doing well and people think it will earn money, its shares become more valuable. But if the company has problems — like a bad product, a workers' strike, or a big loss — fewer people want its shares, so the price of the share drops. Apart from a company's performance, government's policy changes like new laws, **tax rules**, political instability, wars, or **economic shocks** can also cause share price fluctuations.



THINK ABOUT IT

Why do companies issue shares, and why do people buy them? Are there any benefits of owning shares?

Economic shocks: Sudden unexpected events that cause big changes in a country's economy — how people earn, spend, and save money. For instance, natural disasters (earthquakes, floods, etc.), war, pandemic, sudden changes in government policies, prices of commodities, etc., can bring economic shock to an economy.

Tax rules: Tax is a compulsory contribution given by individuals and businesses respectively to the government on income and profit. It is also added to the cost of some goods, services, and transactions. The government sets rules regarding the payment of various taxes.

OTP:

It stands for One-Time Password — a unique temporary code made up of letters or numbers that is used for verifying identity or authorising any transaction.

Financial frauds and how to prevent them

Digital payments have made life easier, but users must beware of fraud and scams. Fraudsters trick people through fake calls or messages to download harmful apps or mislead people into sharing bank details or One-Time Passwords (OTPs). This gives them access to the user's mobile or computer, enabling them to steal personal data from the device and draining money from the bank accounts.

BEWARE

Never share personal information like phone number, account number, home address, passwords, or OTPs with strangers.

Avoid clicking unknown links or videos received through messages.

Don't store sensitive banking information like account passwords, debit card PINs, etc., on devices.

Fig. 8.23. How to stay safe while making digital payments?

In case of fraud, report via helpline 1930 or the National Cybercrime Reporting Portal.

**Before we move on ...**

- Financial infrastructure comprises financial institutions like banks, payment systems, the stock market and so on. These help with the flow of money among people, businesses, and the government by enabling smooth financial transactions.
- It also promotes savings, credit and investment that boosts economic activity, and ultimately contributes to the nation's prosperity.

Questions and activities

1. What is financial infrastructure? How does it complement physical infrastructure?
2. How does having a bank account help people? Should everyone be required to have a bank account?
3. What could be the possible advantages and disadvantages of compound interest for savers and borrowers?
4. How does financial infrastructure enable the flow of money between households and businesses? Can you think of how the government can facilitate this flow?
5. What could be the reason for the higher interest rate earned on fixed deposits as compared to a savings account?
6. Sahil received ₹10,000 as a prize in a poster-making competition. His father promises to pay him 12 per cent interest per year if he does not spend the amount. After 3 years, how much money would Sahil have?
7. How does the stock market help mobilise the savings of individuals? In what ways do companies benefit by issuing shares to people?
8. How can we balance the convenience of digital payments with the risk of cyber fraud?
9. Ask your family members or neighbours about—
 - how they save money?
 - whether they use UPI, ATM or cheques, the kinds of transactions they perform through UPI; do they find UPI better than using cash or not, and why.
 - if they or their acquaintance have experienced digital fraud, for instance, through a fake call or message asking for bank details. What did they do when they realised it was a scam, and what did they learn from that experience?

Summarise your findings in a table or short report. Share one surprising insight with your class.

10. Create a Financial Safety Poster.

- Design a poster with dos and don'ts of digital banking safety (for example, not sharing OTPs, reporting frauds).
- Include emergency numbers or websites like <https://cybercrime.gov.in> or 1930 helpline.
- Hang the posters in school corridors or the library.

11. Cheques are often used to pay utility bills. Ask your parents to allow you to fill out the cheques for a few monthly payments.

12. Suppose you have to withdraw ₹10,000 from your bank account, how would you fill out the cash withdrawal slip at your bank? Let us try below!

AABBC DDFT शाखा / Branch
(केवल पूरा शाखा के उपयोग के लिए) (Usable at Home Branch Only)
दिनांक / Date: 00/00/0000

पुनः ₹ 10,000/- रुपये आहरण करें / Pay to self / Put the sum of Rupees: **TEN THOUSAND RUPEES ONLY** ₹ 10,000/-

आहरणकर्ता के हस्ताक्षर / Signature of A/c Holder: A.B.Ccccc
आहरणकर्ता का नाम / Name(s) of A/c Holder(s): AAAAA BBBB CCCCC

लेनदार और डी / Trans ID: _____
चेक नंबर / Cheque No.: _____
को भेजें / Pay to Sh./Dm./Ms.: _____

पारित अधिकारी के हस्ताक्षर / Signature of Passing Officer: _____
पुनः भुगतान करने वाले अधिकारी के हस्ताक्षर / Signature of Paying Official: _____

Fig. 8.24. Cash withdrawal slip

Factors of Production

For a country like India, the largest contribution to growth and productivity will probably come about from more efficiently using land, labour and capital, thus they must be used more efficiently.

— Bibek Debroy,
Chairman, Economic Advisory Council
to the Prime Minister (2017-24)



Fig. 7.1.

The Big Questions ?

1. What are the factors of production?
2. How are these factors interconnected?
3. What is the role of human capital in production, and what are its facilitators?





Fig. 7.2. A glimpse at the production of some goods

INTRODUCTION

Have you ever wondered how your clothes, shoes, school bag, furniture, phone, computer, etc., are made? Every product around you goes through a production process before it finally reaches you. This production process involves using resources or inputs required to produce the final product. The resources or inputs used in producing goods and services are hence called **factors of production**.

Meet Ratna, who runs a small restaurant named Pause Point, on the city outskirts. Popular among highway travellers for its tasty, high-quality food, Pause Point is growing with a team of seven people who assist Ratna in managing the business. When she started five years ago, she had to choose a location, organise money for rent and equipment, hire staff, buy ingredients, and plan how to make her dream a success.

Businesses or Enterprises combine various inputs or factors of production to create goods and services, which also generate opportunities for people to engage in economic activities.

Business or Enterprise:

A firm, a shop, a factory, etc., which produces or sells goods or provides a service.

LET'S EXPLORE



- In small groups, study the economic activities around your locality. What are the different types of goods and services being made or provided?
- Here's a small report that Latha, Asha, Mohan, and Kiran made. You can make your own report for shops of your choice.

Types of shops	Number in the locality	Goods produced or services provided	Types of inputs required
Grocery shops	13	Food grains, milk, bread	Packaged goods, perishables, storage space
Restaurants/ food stalls	8	Cooked meals, snacks, beverages	Raw ingredients like vegetables and fruits, gas, utensils; cook/helper
Vegetable vendors	15	Fresh vegetables and fruits	Fresh produce, baskets, weighing scale, cart or stall
Mobile repair shops	4	Mobile repair, mobile accessories	Tools, spare parts, knowledge and skills to handle mobile components and functions
Salons/ parlours	3	Haircut, grooming, beauty services	Scissors, creams, beauty products, water, electricity

Looking at your group's report, think about the following:

- Where do people get the money that they need for their business?
- Where did the hairdresser get trained?
- Who taught the food vendors to cook?
- What motivated the business owners to start their business?

Skill:
The ability
to do an
activity
or job
well with
practice
and
training.



In economics, the inputs used in a production process or the **factors of production** are classified into four types — land, labour, capital and entrepreneurship. Technology is a facilitator and a crucial factor that enables enterprises to produce more goods with the same or fewer inputs. Let's learn more about these inputs in the sections ahead!

FACTORS OF PRODUCTION

Land (natural resources)

The word 'land' in economics encompasses not only geographical land but also natural resources like soil, forests, water, air, sunlight, minerals, oil, and natural gas. Recollect the chapter on *Natural Resources and Their Use*, where we discussed different types of resources that nature gifts to us and how we use them. Businesses either purchase the required land or pay rent to use it for a period of time.

LET'S EXPLORE

Revisit the table in your report. Which of the items on your list can be labelled as 'land'?

Labour (human resources)

Labour is essential in production, involving physical and mental effort. Carpenters, farmers, construction workers, teachers, and doctors use varying levels of physical strength, knowledge, and **skill**. Everyone contributes differently through their work, helping create goods and services for society's needs.

People as a resource

Human beings play a key role in economic activities and production processes as they apply their knowledge, skills, and decision-making abilities to create goods and services. For example, a police officer maintains law and order, a scientist invents new technologies, a chef develops new recipes, etc. They all require a special set of knowledge and skills to perform well. Of course, they all must be dedicated to their work to do



Fig. 7.3. Worker at a tea plantation



Fig. 7.4. Chemical engineer



Fig. 7.5. Carpenter

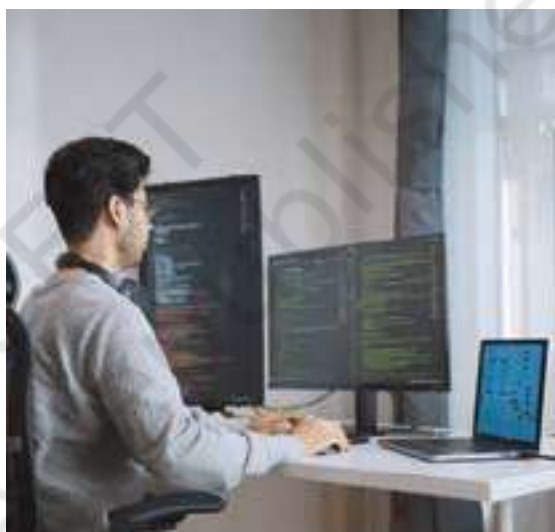


Fig. 7.6. Software developer

a good job. The word **labour** refers to the physical and mental effort used in production. However, **human capital** refers to the specialised skills, knowledge, abilities and expertise required to perform that labour. Thus, human capital is not just the basic efforts of labour but also the quality and efficiency of that labour.

Facilitators of human capital

Education and training

Education helps individuals gain knowledge, starting with basic literacy and extending to expertise in specific fields. What you



Fig. 7.7. Education and training

Training:

It is the process of learning the required skills to do a particular job or activity.

Cognitive:

It refers to the process of learning, knowing and understanding.

learn in school enriches your knowledge and prepares you to solve real-world problems. For example, a civil engineering student learns principles of design and materials, which are applied to building infrastructure like roads and bridges. The challenge lies in creating durable, cost-efficient, and eco-friendly solutions. This is achieved through **training**, such as observing construction sites, testing materials, understanding safety procedures and hands-on application. With education and training, individuals are prepared to excel in their careers.

Healthcare

Good health supports **cognitive** development, allowing children to attend school regularly and learn better. Similarly, workers are able to give their best, physically and mentally, when they are of sound body. They are able to do more in shorter time periods, be creative, and do not have to be away from work due to ill health.



THINK ABOUT IT

How do infrastructure and healthcare systems like hospitals, primary healthcare centres, doctors, pharmacies, diagnostic labs, etc., contribute to developing human capital?

Social and cultural influences

A culture of hard work, continuous improvement, and endeavouring to do things well has helped countries to move forward. There is a Japanese concept called *kaizen*, which means ‘continuous improvement’. This concept has been applied in Japan since the mid-1940s and has helped Japan achieve higher standards of living for its people. Another example could be that of the German work ethic, which is deeply rooted in their history. Germany is renowned for its high-quality industrial output. They place a high value on punctuality, attention to detail and quality. These qualities of their human capital contributed to their rise as a global leader in technology and manufacturing.

LET’S EXPLORE

- Let’s do a small experiment. Make a list of 10 working adults in your family and neighbourhood. Ask them to describe the culture at their workplace. Share notes with your classmates. What did you discover? What are some adjectives that occur more frequently?
- In the Chapters of the theme Tapestry of the Past, you have seen examples of the art and architecture in India across several centuries. What do you think are the factors that enabled their creators to achieve such high levels of excellence? Discuss in groups and share in class.



Productivity:
Ability to do more in a particular time period.

Adult literacy rate: Percentage of people aged 15 and above who can read and write with understanding a short, simple statement about their everyday life.

Economic Life Around Us
7 – Factors of Production

Challenges to human capital

Our nation has come a long way in various aspects of human capital since independence. Literacy is an important characteristic of the population and helps enhance the skills and **productivity** of human capital. The **Adult Literacy Rate** in India is 85 per cent for males and 70 per cent for females as of 2023, as per the World Bank estimates. Despite progress in many areas, India faces challenges in developing human capital.



THINK ABOUT IT

- Harsh, a student at government school in Grade 8, had to drop out of school two years back as his father lost his job. How do you think the loss of schooling years will affect Shivay when he grows up?
- What problems could businesses face when they do not find workers with the required skills?



Fig. 7.8. Students writing an exam

According to the Economic Survey of India 2024, 65 per cent of people in India are below the age of 35 years. This means that India has a young, productive population, which may help the country reap the benefits of a demographic dividend. The demographic dividend refers to the benefit a country gets when it has a large number of young and working people. When more people are working and earning, and fewer people depend on them, the country

can grow businesses and improve living standards. To take advantage of this potential, individuals must have access to quality education, health, training, and skilling, which would contribute to the nation's progress. You will learn more about this in the year ahead in the chapter on Demographics.



THINK ABOUT IT

Are some jobs more important than others? What would happen if nobody cleaned the streets, collected the trash, farmers stopped cultivating the crops, doctors were not available to treat patients, and so on?

Today, there is a vast variety of jobs requiring different kinds of skills. However, India has had a rich legacy of skill-based knowledge systems and workmanship.

India's ancient skill heritage

During ancient times in India, work was a form of expressing their nature and striving for perfection, an offering to the deity or the receiver, as the case may be. It had to be created or done with devotion. The tools (a type of technology) used were worshipped; this tradition continues as *Viśhwakarmā pūjā* or *Āyudha pūjā*. So, creating products involved a unique blend of *kalā* (art) and *vidyā* (knowledge). Knowledge was passed on from generation to generation, and also built on. The *śilpa śhāstras* are ancient texts that contain detailed design guidelines on sculptures, paintings, buildings, wooden items, and jewellery. For example, texts on sculpture prescribe exact specifications regarding postures, colours, measurements, and proportions of figures.



DON'T MISS OUT

Generations of families of sculptors have worked on constructing India's temples over centuries. They used their skills without expecting to see the finished outcome. They pursued excellence, considering work as worship by practising regularly and learning new techniques.

Stitched shipbuilding

Indians used a unique stitching technique dating back over 2000 years to make ships and boats, which they used to conduct maritime trade and cultural exchanges across the Indian Ocean. The technique involved stitching wooden planks together using cords instead of nails, which made them flexible and helped the ships navigate the Indian Ocean with ease.



Fig. 7.9. Re-creation of a 5th-century stitched ship



LET'S EXPLORE

- Many of the traditional techniques of production have either disappeared or are on a decline. For example, the stitching of ships saw a severe decline after the arrival of Europeans in the Indian Ocean in the 16th century. This technique is now used for making small fishing boats.
- Why do you think the use of indigenous techniques has declined? Discuss in the class.
- Find out some techniques and products from your region that showcase human effort and skill. Explain briefly using drawings and text in the class.

Capital:
In economics,
any asset,
whether
physical or
financial, used
to produce
goods and
services.

Capital

Enterprises also require **capital** that comprises monetary resources and durable assets like machinery, tools, equipment, vehicles, vending carts, computers, shops, factories, office buildings, etc., for their day-to-day operations. Just as Ratna would have required money to take the land on lease, buy the furniture and kitchen equipment, etc. These are all called 'capital' — money plus human-made resources that are used to produce goods and services.

Capital is essential to a manufacturing unit or a services sector enterprise. But where do businesses get the capital? Generally,



Fig. 7.10. Machinery



Fig. 7.11. Bank

personal savings, family, and friends are the first source of funds and support for individuals when they start a business, just as Ratna did when she started her business. However, the funds were insufficient for Ratna to start the business, so she took a loan from the bank to meet the shortfall. She paid **interest** along with a part of her loan amount over a period of time. Similarly, large companies require a lot of money to expand their business; hence, they raise money from the general public through the stock market. The **stock market** is a special type of market where shares are bought and sold. Large companies raise money from the public by offering them a share of the profits, called a **dividend**. In other words, big businesses can raise money or financial capital through such a market and can sell shares of their business. You will learn the exact mechanism of how this works in the higher grades.

Interest:

The amount of money paid by the borrower of a loan to the lender for using their money for a specific time.

Dividend:

An amount of money paid regularly by a company to its shareholders out of its profits.

LET'S EXPLORE

Identify a factory in your region. Find out how much capital may have been invested in the construction of the factory (you may provide an estimate). What kinds of equipment does the factory use to create its finished products?



Entrepreneurship

Entrepreneurship means starting your own enterprise or creating something new to solve a problem. An entrepreneur is



Fig. 7.12. Bamboo and cane products, Arunachal Pradesh



Fig. 7.13. Food processing



Fig. 7.14. Pottery products, Delhi



Fig. 7.15. Petrochemical plant

Startup

A startup is an entrepreneurial venture with limited resources that aims at rapid growth and expansion while leveraging technology.

a person who comes up with an idea, takes risks, gathers other factors of production, and works hard to make their **startup** idea successful.

An entrepreneur's vision for solving a problem helps bring innovative products and services to the market that benefit society and the nation. At the same time, they also create job opportunities and support livelihoods. In return, they derive a deep sense of satisfaction from seeing their dreams become a reality and serving the people.

Thus, an entrepreneur is one who:

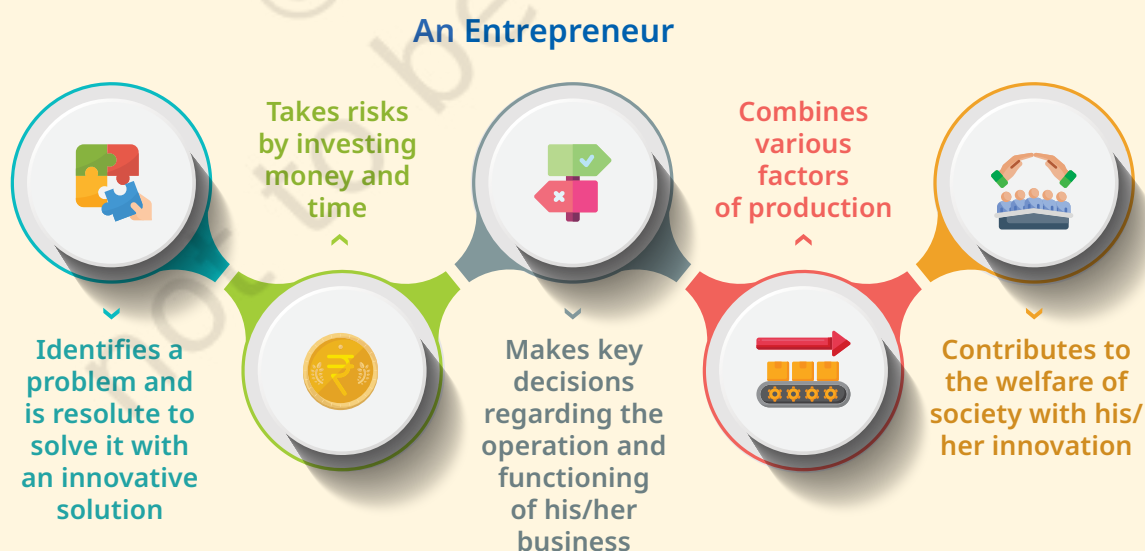


Fig. 7.16. Tasks performed by an entrepreneur

The man who dreamed big for India

J.R.D. Tata — entrepreneur, industrialist and philanthropist

Jehangir Ratanji Dadabhoy (J.R.D.) Tata was one of India's greatest entrepreneurs and played a big role in building modern India. He was born in 1904 and became the head of the Tata Group, one of the largest business groups in the country. He believed that businesses should not only make money but also help society. He started India's first airline, Tata Airlines, in 1932, which later became Air India. Under his leadership, the Tata Group expanded into many areas like steel, cars, power, and chemicals. J.R.D. Tata was also known for caring about his workers and believed in providing them with good working conditions. He was a man of vision, hard work, and honesty. In 1992, he received the Bharat Ratna, India's highest civilian award, for his great service to the nation.



Fig. 7.17. J.R.D. Tata



THINK ABOUT IT

- What could be the lessons for young entrepreneurs that you can gather from the above case?
- Does the existing knowledge of the entrepreneur help in finding solutions to the problem at hand? Or do they need to seek other sources?
- Is profit the only motivation for an entrepreneur? Why or why not?
- What are the other personality traits required to be a successful entrepreneur?

TECHNOLOGY: AN ENABLER OF PRODUCTION

Technology means the application of scientific knowledge. For example, a camera converts light into electrical signals to create a digital image. Any production-related activity uses some form of technology. Some early forms of technology that have existed since ancient times are still in use today.

Today, newer and advanced technological developments are applied in various areas, making our lives easier. For example, payments can be made at the click of a button through UPI (Unified Payments Interface); farmers can get advance weather updates; Global Positioning Systems (GPS) can discover the shortest routes for transporting goods, and so on.



Fig. 7.18. Drones spraying fertilisers to improve crop health



Fig. 7.19. Robots assisting in surgical processes

Have you noticed how old technology gets replaced by a new, better one?

This process makes it easier for people and businesses to get things done and improve how they work. For example, instead of sending letters by post, we now use email to communicate with people quickly and at a lower cost. However, remember that technological progress does not always mean replacing old technologies — some, like pulleys and wheelbarrows, are still in use.



Fig. 7.20. A wheelbarrow on a construction site



Fig. 7.21. Pulley used in boats

Now, let's look at examples of how technology is helping students learn, build new skills, and find jobs.

Technology paving the way for accessing knowledge, skills, and job opportunities

A variety of online courses are available to students through Government platforms like **SWAYAM** (Study Webs of Active Learning for Young Aspiring Minds), which offers courses for Grade 9 onwards and operates on Massive Open Online Courses (MOOCs) through which learners can explore subjects like robotics, aquaculture, textile printing, and so on that are free of cost. Students benefit from learning at their own pace, from anywhere, while pursuing other jobs or courses. Online portals, like the Government's **National Career Service**, help people find job opportunities across various sectors, from plumbing to accounting. This is how technology has eliminated geographical barriers, allowing people to access knowledge, skill development and jobs in India and abroad. The services to these online portals can be accessed through the following links:

- <https://swayam.gov.in/>
- <https://www.ncs.gov.in/>



Fig. 7.22. Online learning



LET'S EXPLORE

- Can you think of some technological advancements that have impacted the lives of people and communities around you? Talk to elders at home and in the neighbourhood about it.
- Think of an invention that you would like to make to solve a problem. Write down its related information on a piece of paper, such as its name, what it does, and how it works, sketches or drawings of what it would look like, and so on. Discuss with your classmates.

HOW ARE THE FACTORS CONNECTED?

The factors — land, labour, capital, entrepreneurship and technology are combined to produce goods and services, and the proportion of each factor used depends on the product. For example, output from the agriculture, construction, and handicraft sectors relies more on labour and thus is labour-intensive, while semiconductor chips or satellites require more capital, specialised machinery, and are capital-intensive.

These factors complement each other and are interconnected; in case of some missing or misused factors, production can become inefficient or can be halted. However, in other cases, new techniques can change the proportion used and output. For instance, increased machine use in agriculture can lower dependence on labour. Similarly, 3-D printing can help revive the dying art forms in textiles by producing handloom products on a large scale to serve the market. The production inputs are available at different geographic locations. Enterprises can procure them from these varied locations and combine the inputs to produce goods and services. Thus, the geographic interconnectedness provides businesses with access to varied inputs. However, production activities sometimes face severe supply chain challenges. The **supply chain** is a network of individuals, organisations, resources, activities and technology that are involved in the production and sale of goods.

When a disruption in the supply chain occurs due to relying on sources from far-off places, instead of local inputs, it results in a halt in the production process, as was the case during the COVID-19 pandemic.



DON'T MISS OUT

India is the world's second-largest mobile phone manufacturer after China in 2025! Let's understand these ideas through a flow chart depicting mobile phone manufacturing.

The process of mobile phone assembly



Fig. 7.23

Human effort is involved at every stage of production to design, supervise, and improve products and processes. For example, teams of software, electrical, and mechanical engineers, along with project managers, use their expertise to develop a product. The entrepreneur provides guidance on how resources should be used. Then, procuring resources like land, factory space, machinery, and skilled workers requires financial resources. Together, all these inputs are essential, working like puzzle pieces to create the goods and services we rely on!

RESPONSIBILITIES TOWARDS FACTORS OF PRODUCTION

When we produce goods, we use natural resources like land, water, and minerals. However, these resources are limited and can be degraded if we are not careful. For example, in Tamil Nadu, many people earn money by working in leather factories. This helps the local economy, but the waste from these factories can pollute rivers and soil. In the same way, when old smartphones are not recycled properly, harmful substances like lead and mercury can leak into the ground and water. This pollution can be dangerous for people, animals, and plants. That is why it is important for producers to use natural resources responsibly — so that we can meet our needs today without making it harder for future generations to meet theirs. They should try to reduce waste, avoid pollution, and protect the environment while making products.



THINK ABOUT IT

How are local communities and biodiversity affected by such activities? Do you also know some places around you that have seen water and land degradation over time? Discuss in class.

So, it is important for producers to adopt sustainable practices to replenish natural resources for future use.



Fig. 7.24. Recycling industrial wastewater before releasing it into water bodies



Fig. 7.25. Use of recycled products as inputs

Apart from land and natural resources, businesses have responsibilities towards their workers and employees, which are summarised below.

- **Fair compensation and working conditions:** Employers need to ensure that workers are paid fairly for their labour and that they work in a safe environment.
- **Skill development and training:** There is a responsibility to invest in training and education to ensure that workers develop the skills necessary to remain competitive in the labour market.
- **Workplace rights and protections:** Laws and regulations for workers' rights relating to fair treatment, preventing discrimination, and providing benefits like health care or paid leave should be adhered to.

Businesses are motivated to address social and environmental concerns in their operations to benefit society and biodiversity through Corporate Social Responsibility (CSR). This includes reducing polluting activities, addressing the well-being of local communities, treating employees and customers with respect, and so on.



DON'T MISS OUT

India was the first nation in the world to bring a Corporate Social Responsibility law in 2014 that mandated companies to spend 2 per cent of their average profits of the last three years on CSR activities.

Before we move on ...

- Land, labour, capital and entrepreneurship are factors of production that are used in a particular proportion to produce goods and services. These factors complement each other and are interconnected.
- Human capital is the knowledge, skills, experience, and ability of individuals that contribute to their ability to perform work and create economic value. It is influenced



by education, training, health, use of technology, and social context that make people more productive in the workforce.

- The resources help in the production of goods and services that serve society and need to be preserved and utilised judiciously.

Questions and activities

1. How are the factors of production different from each other? What are the difficulties you faced in classifying the factors of production in the exercise given in-text?
2. How does human capital differ from physical capital?
3. How do you think technology is changing the way people develop their skills and knowledge?
4. A skill is something you learn and practice to get better. It helps you do things well, like playing a sport, creative writing, solving math problems, cooking, or even communicating well with people. If you could learn one skill today, what would it be and why?
5. Do you think entrepreneurship is the 'driving force' of production? Why or why not?
6. Can technology replace other factors like labour? Is this good or bad? Support your answer with the help of an example.
7. How do education and skill training affect human capital? Can they be substitute for each other, or do they complement each other?
8. Imagine you want to start a business that produces steel water bottles. What kind of inputs are needed? How would you obtain them? Suppose one of the factors is missing; what happens to your business operations?
9. Interview an entrepreneur or founder of business to understand their motivation to start a business and the

opportunities and challenges they saw. You can work in pairs to create a questionnaire to collect the information and share what you have learned in a report.

10. Think like an economist. Let's explore what happens when things change. If you were Ratna, what would you do in the following situations? Discuss with your classmates.

I. Suppose the rent for your space suddenly doubles.

- Will you raise the price of the food served to cover the costs?
- Will you look for a cheaper location?
- How does this affect your business?

II. Imagine one of your helpers quits suddenly.

- Can the remaining workers manage the same amount of work?
- Will you need to offer a higher salary to attract a new worker?

III. You receive a small loan to invest in better technology for your restaurant.

- Will this increase the production or improve quality?
- Will it help you reach more customers?

IV. Suppose another restaurant opens in the neighbourhood.

- How will you attract and keep your customers?
- Will you improve your service, reduce prices, or offer something new?

V. What government laws or rules should be amended to improve the ease of doing business?

Dynamics of Population

CHAPTER

6

Population ageing is poised to become one of the most significant social transformations of the twenty-first century, with implications for nearly all sectors of society.

— Ban Ki-moon (former Secretary-General, United Nations)



Fig. 6.1.

The Big Questions ?

1. What is demography?
2. What are some important concepts of demography?
3. How has the population of India and the world changed over time?
4. How do population trends shape societies and economies?



Structure of population:

Refers to how a population is made up based on different characteristics such as age, gender, education, etc.

Demography:

The study of the composition of human population in terms of different factors like age, sex, occupation, and religion, and how they change over time.

Working-age population:

Individuals between the ages of 15 and 64 years who are generally considered the most productive in terms of economic output and participating in workforce.

WHAT IS DEMOGRAPHY?

Have you ever wondered how many people live in the world? The human population is spread around the world, differing in size, **structure**, and composition. For instance, there are people from different age groups, such as children, adults, or the elderly; different genders, various levels of education; diverse occupations, and religion and so on. Moreover, many of these characteristics of population change over time due to births, deaths, and movement of people within and across countries. The study of these features of the human population and how they change over time is called **demography**.



Fig. 6.2. Components of demography

Demography helps to better understand the people living in a region. Governments can utilise such information to plan infrastructure, such as schools, hospitals, roads, and housing, as well as municipal services like water, energy, waste management, etc. For instance, if a place has many young children, more schools are needed; if the proportion of the elderly in a population is higher, more facilities for healthcare are required. Similarly, a higher proportion of young **working-age population** implies a greater need for gainful employment generation. Businesses also assess their potential customers based on characteristics like age, gender, and income to create products that match people's needs. Hence, determining a country's population size and structure helps to better allocate and manage its resources.



DON'T MISS OUT

In India, the **census** is generally conducted every 10 years to assess the total population and its characteristics. It is the official count of people living in a country in a particular period. Information is collected from individuals regarding age, gender, marital status, educational levels, languages spoken, religion, family size, occupation, employment status, income levels, and so on.

Let us see how the population in India and the world has changed over the years.

POPULATION AT A GLANCE

In 2023, India surpassed China to become the world's most populous country (Fig. 6.3). Today, Indians constitute around 17 per cent of the world population.

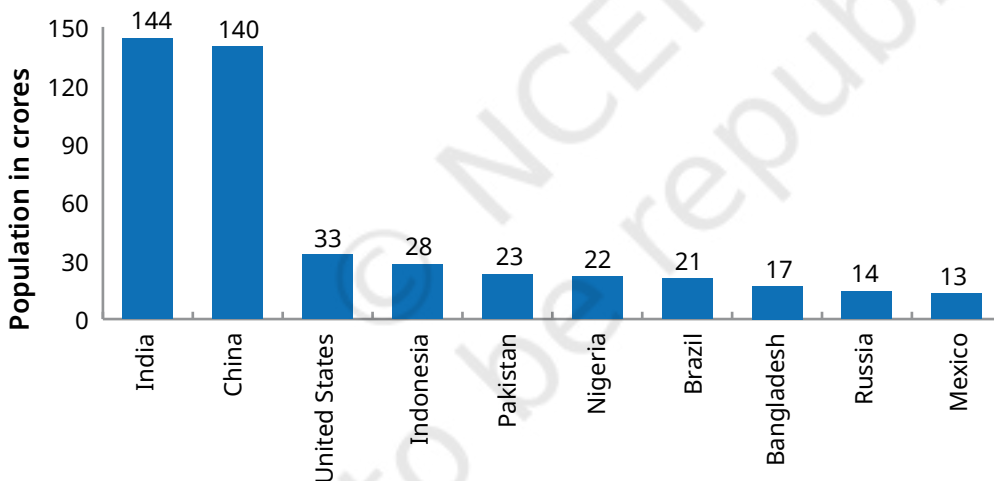


Fig. 6.3. A bar graph of the world's most populous countries (2024)

World population grew from 2.5 billion in 1950 to 8.2 billion in 2025 and is expected to reach 9.7 billion by 2050. Improved healthcare enabled individuals to live longer, which largely explains the trajectory shown in Fig. 6.4. However, growth has slowed over time. According to **United Nations** projections, the population will peak at 10.3 billion by the mid-2080s and then gradually decline as birth rates fall. The growth in population

Census:
Process of collecting, compiling, analysing and disseminating demographic, economic and social information of all persons in a country or a well-defined part of a country at a specific time.

United Nations:
It is an intergovernmental organisation.

Projection:
An estimate or forecast of a future situation based on a study of present trends.

varies across nations. Countries like China, Japan, and Italy are already seeing shrinking populations while India's population is growing for now. At the same time, the population in several African nations such as Nigeria and Ethiopia continue to grow rapidly.

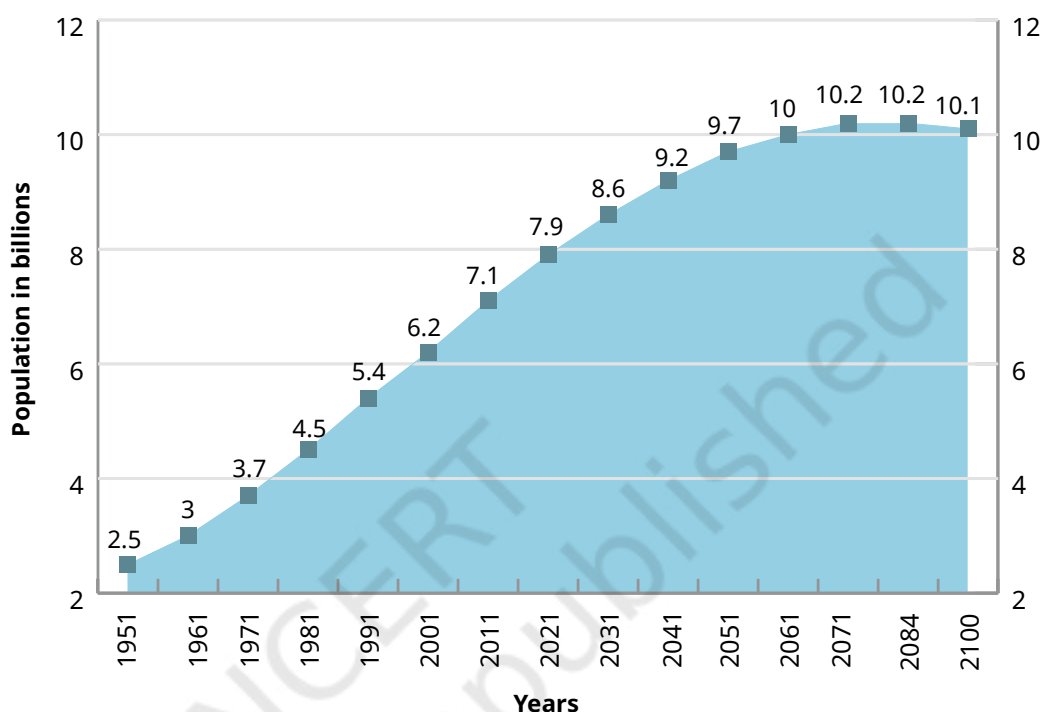


Fig. 6.4. Trends in world population

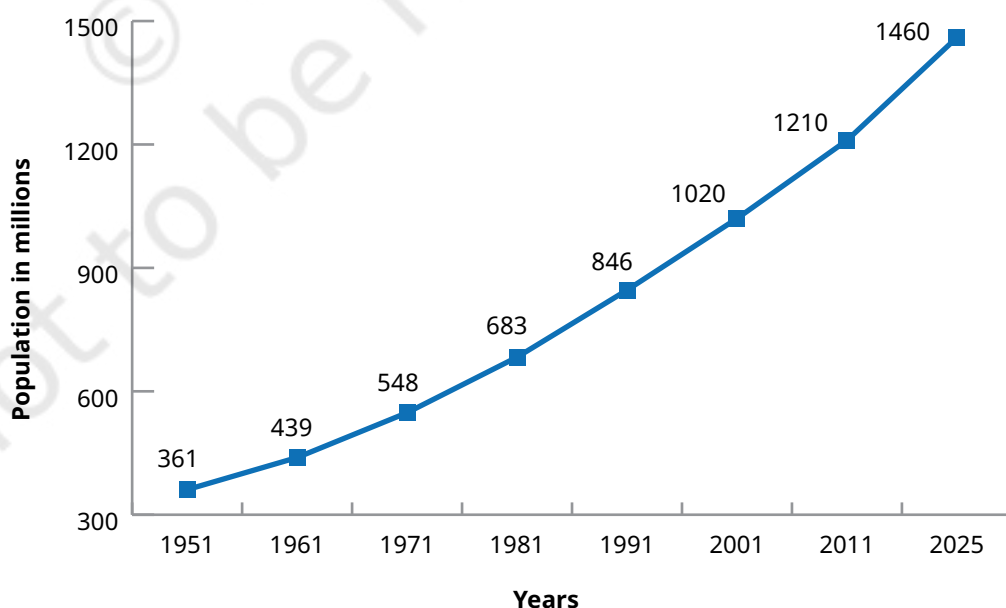


Fig. 6.5. India's population growth trajectory



DON'T MISS OUT

As you may notice, there was a rapid growth in world population from the 1950s onwards. This is the time when several medical advancements took place (like the use of antibiotics, vaccines and oral rehydration solution); better water and sanitation facilities became available to more people, deaths of children due to malaria and diarrhoea came down, etc. This was also a period when the benefits of economic prosperity were reaching a larger population in several countries. The regional distribution of world population in 2025 can be seen in Fig. 6.6.

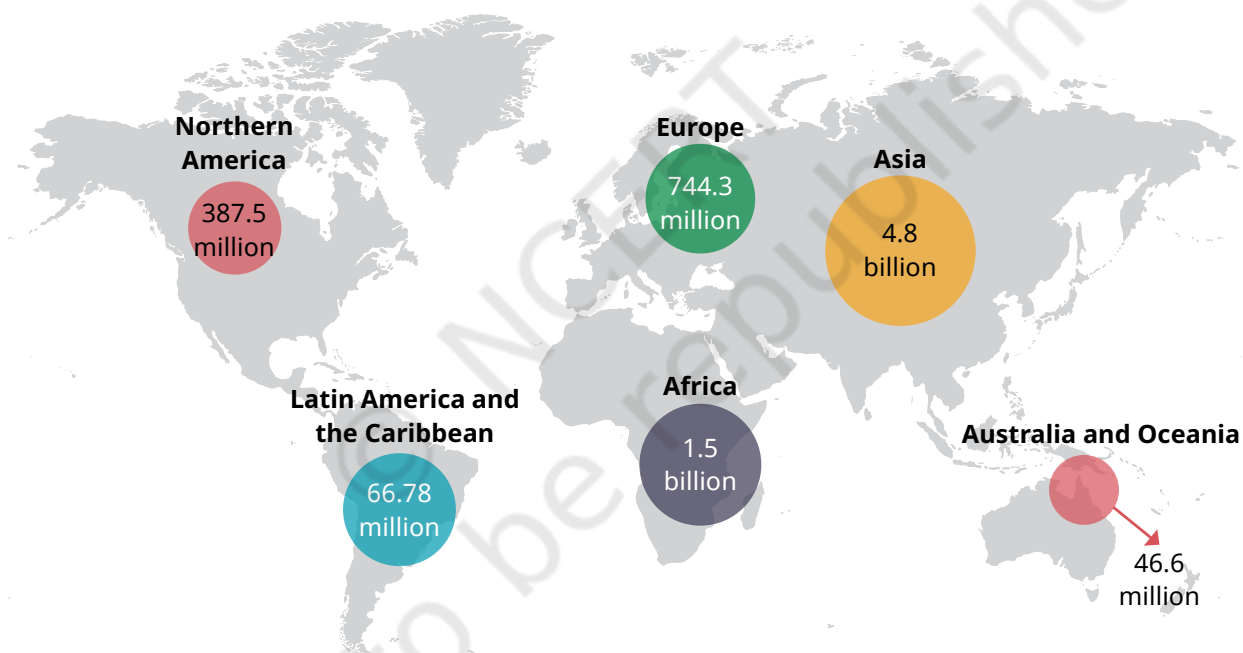


Fig. 6.6. Population in different regions of the world; the total population is 8.2 billion (2025).



LET'S EXPLORE

Ask your family members if they have observed any of the following changes around them over the years:

- farmland or green spaces being turned into new buildings for housing
- more crowded streets; more cars and buses; and traffic congestion in public spaces
- changing types of homes (e.g., smaller apartments, more single-family homes)

What could be the possible reasons behind these changes?

WHAT DETERMINES THE POPULATION OF A COUNTRY?

The current population of any country is a result of years of gradual change in the number of babies born, the number of deaths, and the movement of people in and out of the country over the years.

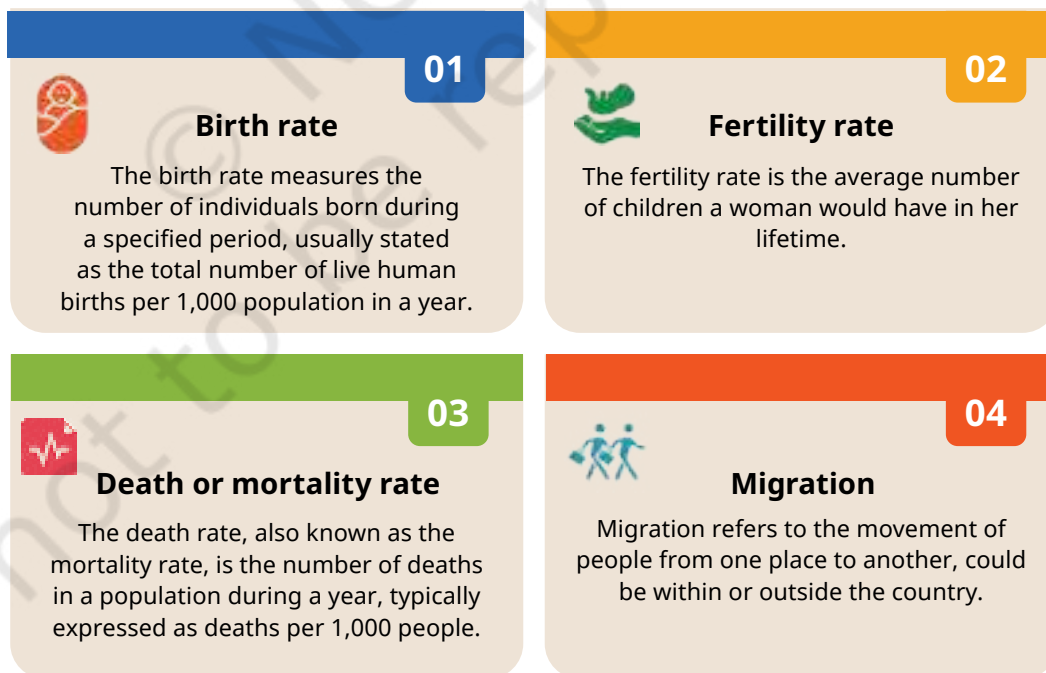


Fig. 6.7. Some key indicators of demography

Birth and fertility rates

Birth rate helps us understand how fast a population is growing. If many babies are being born, the birth rate is high, and the population will grow faster. If fewer babies are being born, the birth rate is low, and the population might grow slowly or even start shrinking over time.

The fertility rate is slightly different. It tells us the average number of children a woman is likely to have in her lifetime. A fertility rate of 2.1 means that, on average, each woman has two children in her lifetime. It is often referred to as the '**replacement level fertility rate**' because it is the number of children needed to replace the parents in the population. This rate is crucial to maintain a stable population. If the fertility rate is above 2.1, the population is likely to grow; if it is below 2.1, the population might shrink over time.

LET'S EXPLORE

Why is the replacement rate 2.1 and not 2 (parents get replaced by children)? What are the situations in which the replacement rate can be higher?



Together, birth and fertility rates are closely linked and are crucial to determine the pace of population growth. When fertility rates fall (women have fewer children), the birth rate also drops. This slows down the population growth. Over time, if people keep having fewer children, a country's population might stop growing or even start falling.



Fig. 6.8.



DON'T MISS OUT

Kinship networks:
An interconnected web of social relationship through blood, marriage, and adoption.

In the 1970s, the Chinese government was worried that its fast-growing population would cause shortages of food, jobs, and housing. To control this, it introduced the One-Child Policy in 1979, allowing most families to have only one child. Those who broke the rule faced fines or job loss. As a result, the fertility rate in China dropped from 7.5 in 1963 to 1 in 2025. China's population peaked at 1.43 billion in 2022 but has started to shrink. By 2050, it is projected to fall to 1.31 billion; on the other hand, people are living longer due to access to better healthcare. So, the share of elderly (those above 65 years) in the total population is expected to rise sharply, i.e., from 14 per cent in 2023 to 26 per cent in 2050.

As more people grow older and retire, there are fewer younger workers available to work in farms, factories, and offices. This could potentially lead to a slow down in the economic growth of the country. The One-Child Policy had a far-reaching impact on households and society. A whole generation of children do not have siblings and **kinship networks**. Though China ended the policy in 2015, and now allows up to three children, fertility rate still remains below replacement level, showing the policy's lasting impact on society and the economy.

A similar push for population control was observed in India through government campaigns like '*Hum do humare do*' from 1952 onwards that emphasised on not having more than two

children. Though India's population is still growing, the fertility rate has substantially declined from 5.7 in 1950 to 1.9 in 2025. Many other developed countries like South Korea, Taiwan, Singapore, Japan, China, Italy, Spain, and France are witnessing a trend of low fertility rates (Fig. 6.10).



Fig. 6.9. Stamp highlighting population control campaign in India from 1989

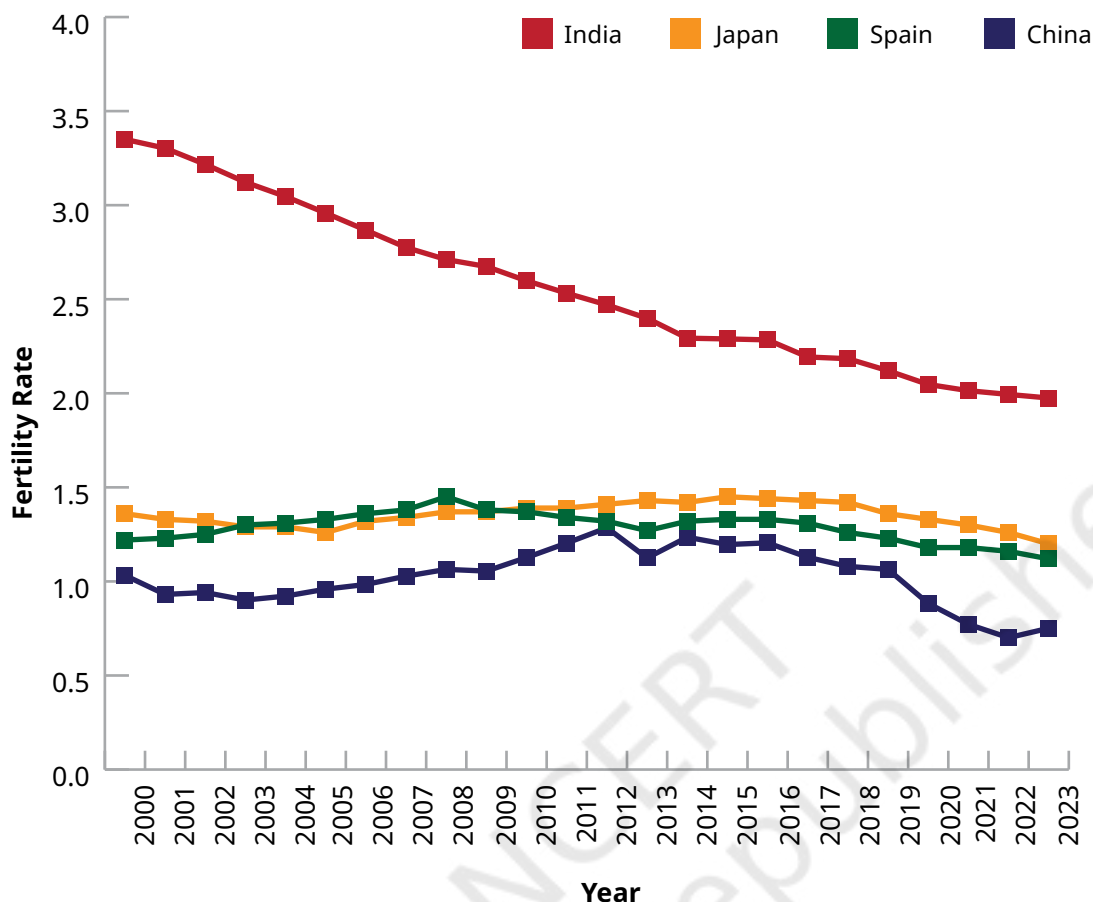


Fig. 6.10. Fertility rates across select countries (2000–2023)

Many factors have contributed to falling fertility and birth rates. One important factor is improvements in access to quality education, especially among girls. As women are increasingly getting formal education and are working in formal jobs, they are more likely to marry at a later stage and have fewer children. Also, with rapid urbanisation, the cost of living is high particularly in cities, so people prefer to have smaller families.

LET'S EXPLORE

Observe fertility and literacy rates in select Indian states in Fig. 6.11. Do you find a relationship between the two **indicators**? Prepare a report on your observations and possible reasons for the same.

Indicator:
A measure
to gauge
something.



Child mortality: Number of deaths of children under 5 years of age per 1,000 live births. It is a key indicator of child survival and overall child health within a population.

Migration: Movement of people from one place to another within or outside a country, to settle either temporarily or permanently, in the new location.

State/UT	Fertility rate	Literacy rate among women (%)
Bihar	3.0	55
Uttar Pradesh	2.4	66.1
Jharkhand	2.3	61.7
Karnataka	1.7	73.4
Punjab	1.6	79.4
Delhi	1.6	83.7

Fig. 6.11. Fertility and literacy rate among women in select Indian states

Death or mortality rate

Another important indicator of population growth is the death or mortality rate. A lower mortality rate indicates the availability of quality healthcare and better nutrition among people in the country. India has made great progress by lowering **child mortality** from 271 per 1,000 in 1950 to 28 in 2023. Similarly, life expectancy at birth in India has risen from just 30 years at independence to 70 years in 2024. Life expectancy is the average number of years a newborn is expected to live if they grow up with the same health, safety, and living conditions that people in their country have today. So, if the life expectancy is 70 years, it means most babies born today in that country are expected to live about 70 years. It doesn't mean every single person will live to be exactly 70, but that on an average an Indian can expect to live up to the age of 70 years.

Migration

People tend to migrate to other areas for better employment opportunities, education, and so on. Sometimes, natural disasters and political instability in an area can push people to migrate. Areas witnessing an influx of migrants see a rise in population over time. For example, cities like Delhi, Mumbai, and Bengaluru have experienced significant population growth due to **migration**. However, concentration of a very large population in a limited area can put pressure on resources like water, air,

and land, and strain services like transportation and housing. You will read more about some of the challenges of urban areas in the next chapter.



THINK ABOUT IT

If many young people migrate from villages or smaller towns to cities, what changes could take place in their native villages?

HOW DO COUNTRIES EXPERIENCE POPULATION CHANGE?

Just as individuals experience various phases of life while growing up, such as childhood, adulthood, and old age, countries' demographic characteristics also change over time with changes in birth and death rates of the population.

Demographers have observed that populations have gone through transitions influenced by economic development,

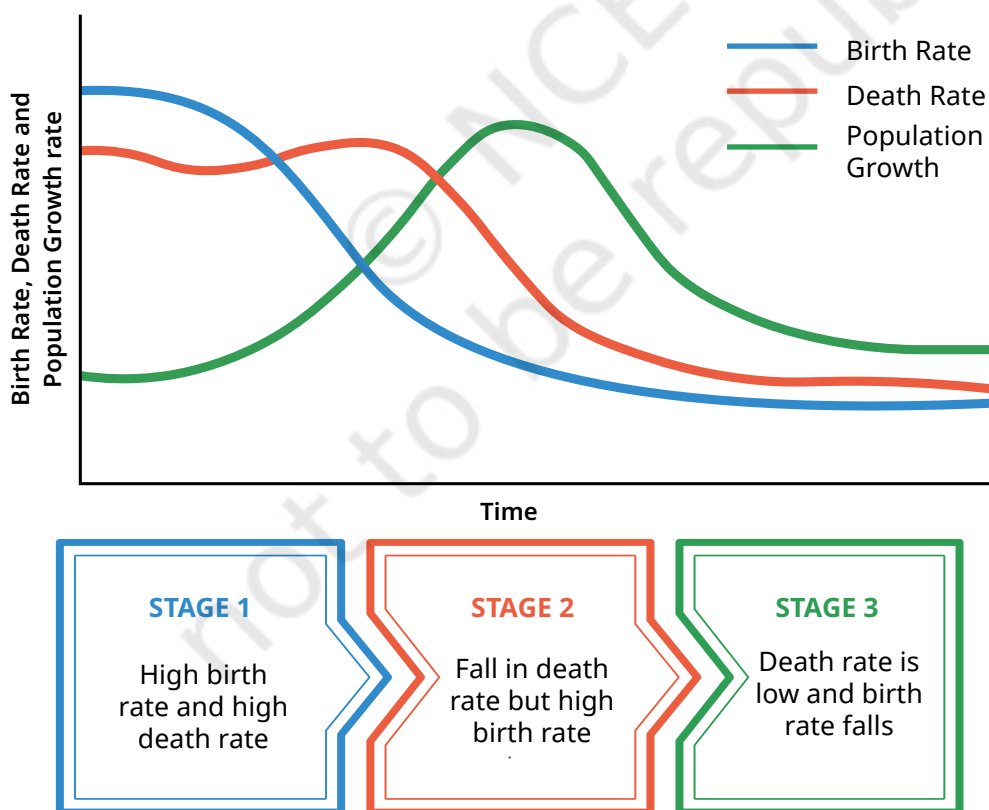


Fig. 6.12. Stages of demographic transition in countries

improved healthcare, education and increased participation of women in decision making in the household. Such demographic transitions can be explained through a sequence of three stages, characterised by different combinations of birth and death rates which affect the size of a country's population. (See Fig. 6.12.)

Stage 1 – High death and high birth rates: Birth and death rates are both high, so population growth is very slow or stagnant. This was true in the case of India from 1901–1921, due to availability of poor healthcare and low literacy among people.

Stage 2 – Death rate falls, but birth rates are still high: As nations progress economically, death rate falls due to availability of better healthcare, but birth rates stay high, causing rapid population growth. In India, after 1951, the population grew rapidly.

Stage 3 – Death rate is low, and birth rate begins to fall: Death rates remain low, and birth rates start to decline due to rising urbanisation, higher income, education, and an increase in women participating in the workforce and having fewer children, which slows overall population growth. If fertility drops significantly, leading to even lower births, the population starts to shrink as seen in many European and East Asian countries like Italy, Japan and South Korea. In India, after the mid-1980s, the fertility rate began declining and is now below replacement level.

India's Population: Composition and Trends

India, the most populous country in the world, has a diverse and dynamic population that is spread across states. Fig. 6.13 shows the percentage distribution of the population across states in India.

Apart from geographical distribution of population, there are specific characteristics such as age, gender, occupation, education, etc., of the overall population which needs to be studied to understand people better. These characteristics are known as the structure of the population or population composition.

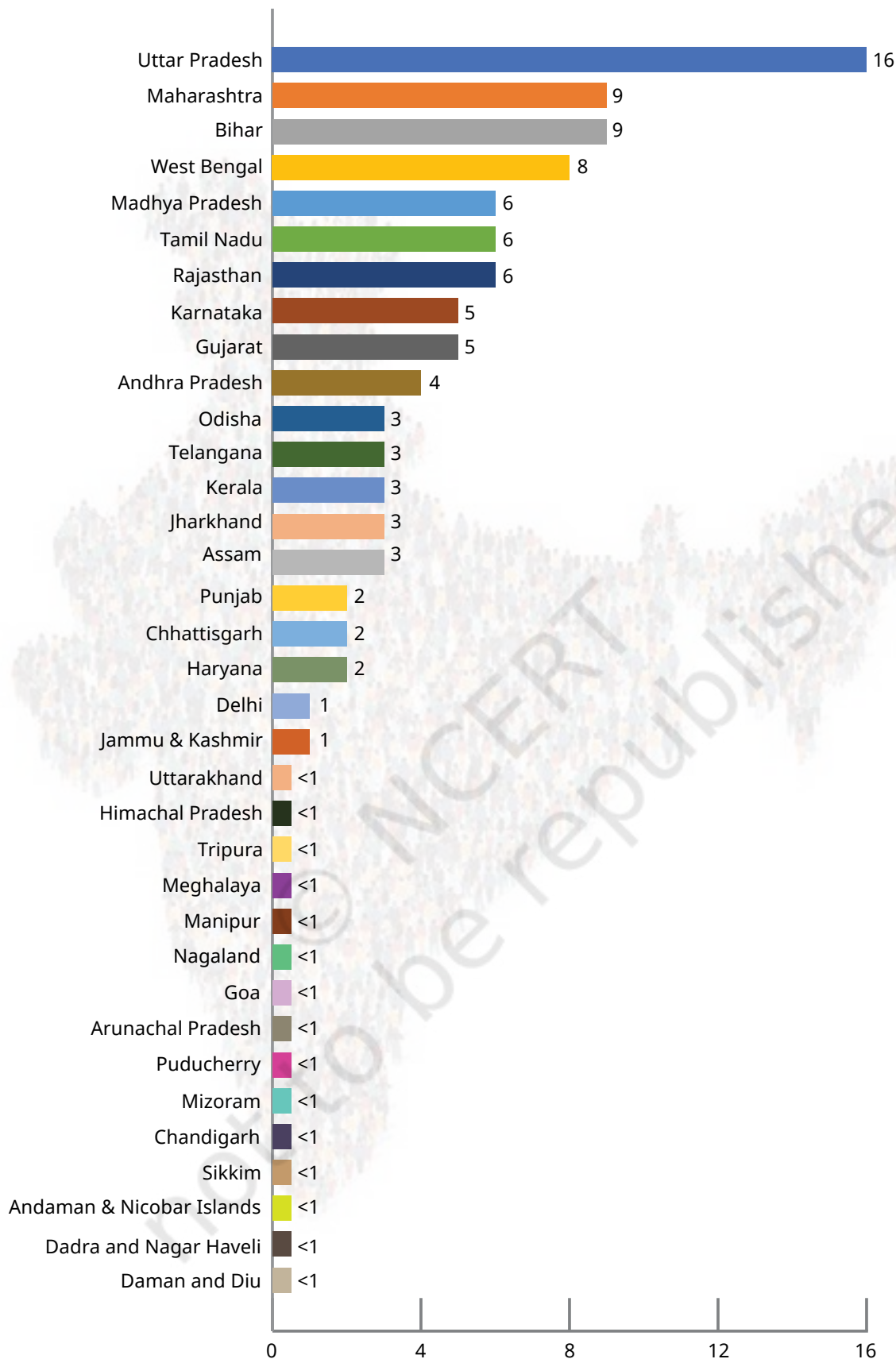


Fig. 6.13. Share of population across Indian states in per cent

Improvement in India's sex ratio

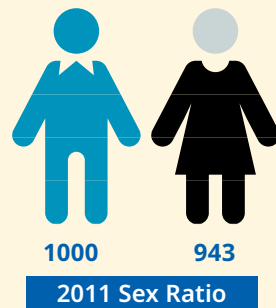


Fig. 6.14.

Population composition uses sex ratio as a key demographic indicator. Sex ratio represents the number of females per 1,000 males in the population. It is used to measure gender balance within the population and reflects the country's socio-economic and cultural dynamics.

As per Census 2001, India's sex ratio stood at 933 females per 1,000 males. It improved to 943 in 2011 where women comprised 48.5 per cent of the total population. A balanced sex ratio is vital for equitable development, social stability, and sustainable population growth.

LET'S EXPLORE

Census figures of 2001 as well as 2011 show the overall number of females per 1,000 males being much less than 1,000. Some states, however, had over 1,000 or near 1,000 (Kerala, Puducherry, Tamil Nadu). What might be the reasons for this?

The **population structure diagram**, as seen in Fig. 6.15, is a useful tool for studying the population composition and how a population is changing over time. It is a special kind of graph that shows the number of people in a country, by age groups and gender.

The bottom part shows young people (like children and teenagers). The middle part shows adults. The top part shows elderly people. If the base is wide, it means many children are being born — the country has a young and growing population (like India or Nigeria). If the middle part is widest, it means most people are working adults — the country has a stable population. If the top is wide, it means there are greater number of older people than young adults — the country has an ageing population (like Japan). The graph is shaped like a pyramid or triangle when there are more young people at the bottom and fewer older people at the top.

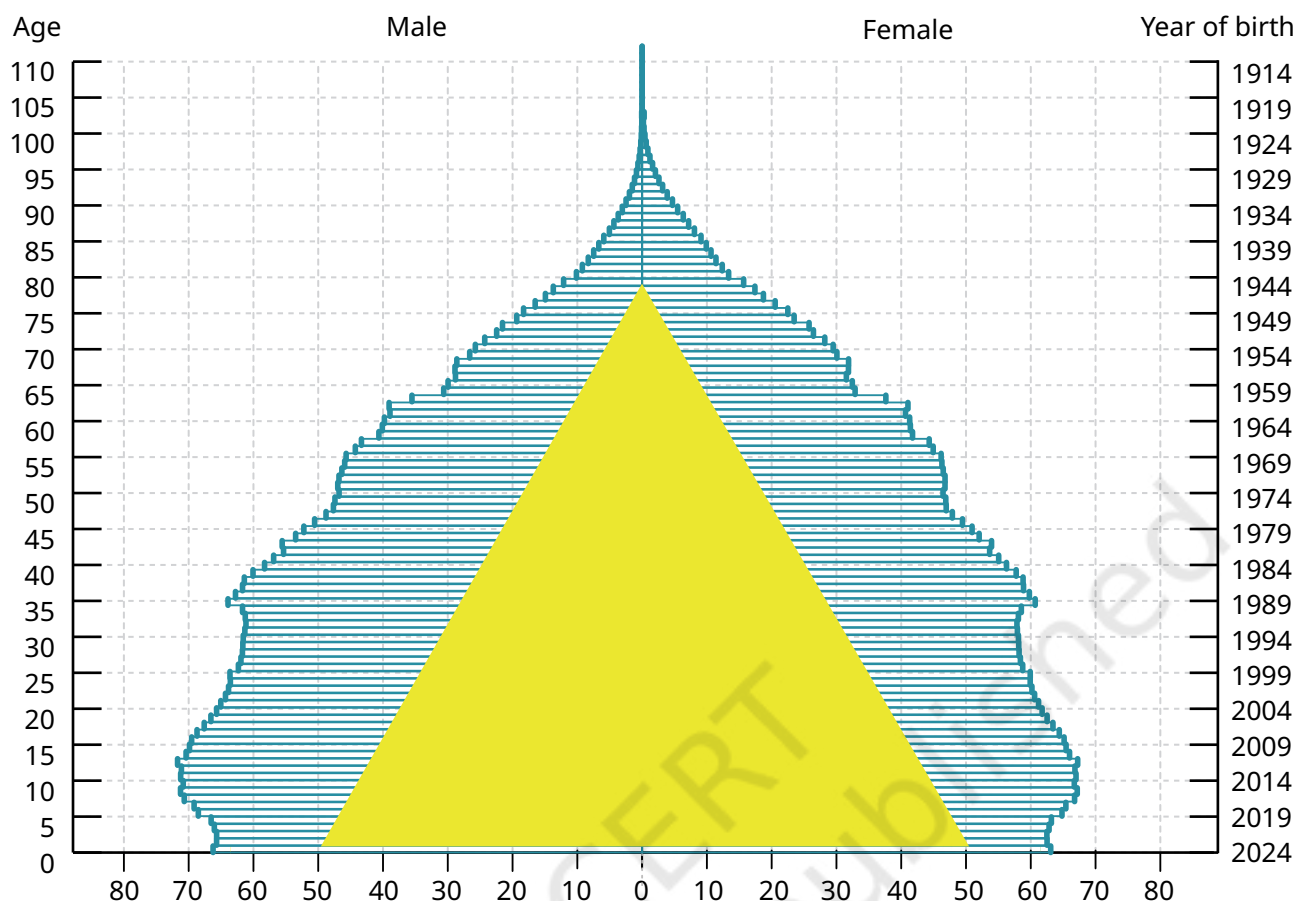


Fig. 6.15. Population Structure Diagram that looks like a pyramid



DON'T MISS OUT

While the term 'population pyramid' is used widely, the representation on paper looks more like a triangle, parts of which have been pulled outwards or shrunk, into different shapes—a 3-dimensional concept represented in 2 dimensions.

Look at how the shape of India's population pyramid has changed since the 1950s (Fig. 6.16).

In the 1950s, India's pyramid looked like a narrow triangle which meant that there were many children and young people, and fewer older people. The birth rate was high because families had many children. The life expectancy (average age people lived to) was low — around 30–35 years — because healthcare and nutrition were not as good.

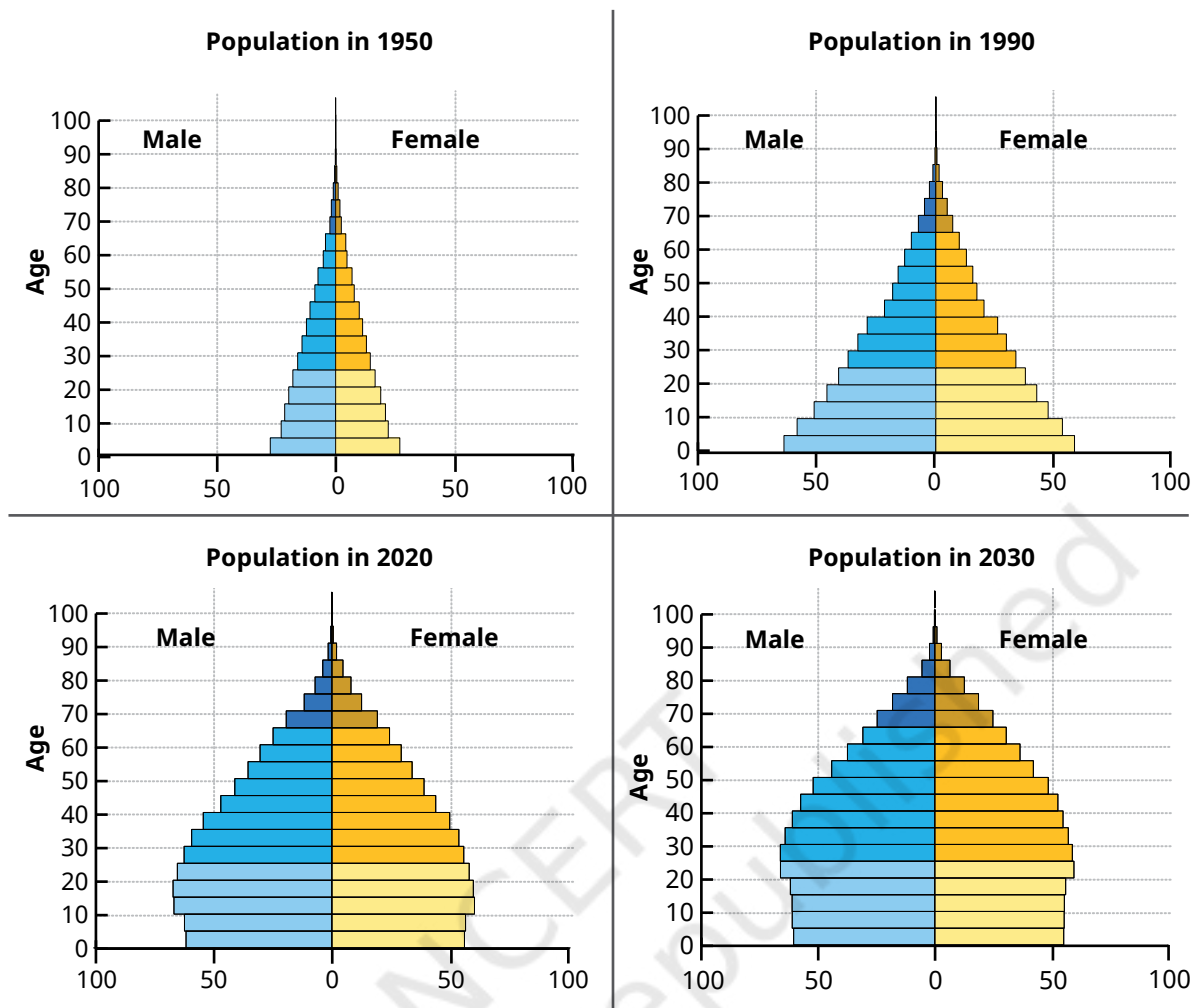


Fig. 6.16. India's population composition and growth, 1950 to 2030

In recent years, India's population pyramid looks less like a triangle and is more bell-shaped. The base has become narrower, which means families are having fewer children than before. The middle part (working-age group) has become much wider, showing a large number of people between 15 and 60 years — this is called India's demographic dividend, i.e., there are many young workers who can help the economy grow.

The top part is slowly getting wider too, as people live longer because of better healthcare, nutrition, and living conditions. So, over time, India's population pyramid shows that the country has **moved from a young, fast-growing population to a more balanced one** — and in the future, it may start to **age** slowly, like what's already happening in countries such as Japan or China.



THINK ABOUT IT

If the replacement rate is less than 2, what will the population pyramid look like? Will there ever be a situation where the number of children is less than the number of aged people? What is likely to happen to the population of such a country over time?

INDIA'S DEMOGRAPHIC DIVIDEND — A LIMITED WINDOW OF OPPORTUNITY

The population pyramid for 2020 in Fig 6.16 shows that a large portion of the population comprises children and young adults. This phenomenon of a large young population (16–30 years) is known as the **youth bulge**, which is common in countries at Stage 2 of demographic transition shown in Fig 6.12.

Around 27 per cent of the Indian population is under the age of 15 years and nearly 65 per cent is in the working-age group (15–59 years).

Country	Median Age (years)
 India	28
 Japan	50
 Italy	48
 Germany	47
 China	40
 USA	39

Fig. 6.17. Median age of population in some countries

As seen in Fig 6.17, India has a large working-age population which puts it in a uniquely beneficial position. Young people can work in factories, offices, farms, or start businesses. The more people work, the larger the volume of economic activities, which helps the country grow. In addition, working-age population

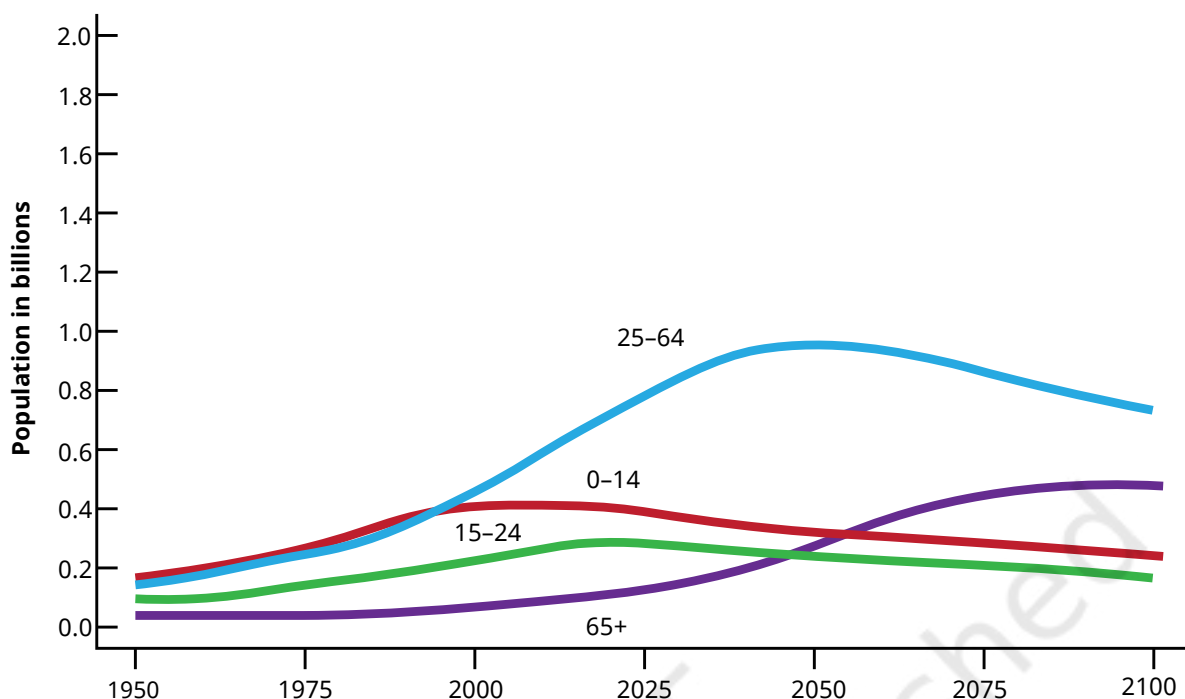


Fig. 6.18. India's population by age groups.

Taxes:
A compulsory contribution levied by the government from workers' income and business profits, or added to the cost/price of some goods, services, and transactions.

earns money and pays **taxes**. The government uses that money to build schools, hospitals, roads, and parks. This economic growth potential of a nation resulting from a younger and productive age structure of a country is known as its **demographic dividend**.

However, this window of opportunity is limited, as the growth in the young population is expected to decrease beyond 2050, as indicated by the declining **blue line curve** after 2050 in Fig. 6.18. The number of children under the age of five peaked in 2007, and since then the number has been falling. The number of Indians under 15 years of age peaked slightly later (in 2011) and is now also declining. After 2050, India's population would begin to transition towards an older population.

These trends have already begun to show in states like Kerala and Tamil Nadu, which are experiencing significant population ageing as compared to Bihar and Uttar Pradesh, as seen in Fig. 6.19.

An ageing population means more elderly people who need care and fewer young people working to support them. This puts pressure on healthcare systems, as older adults need more

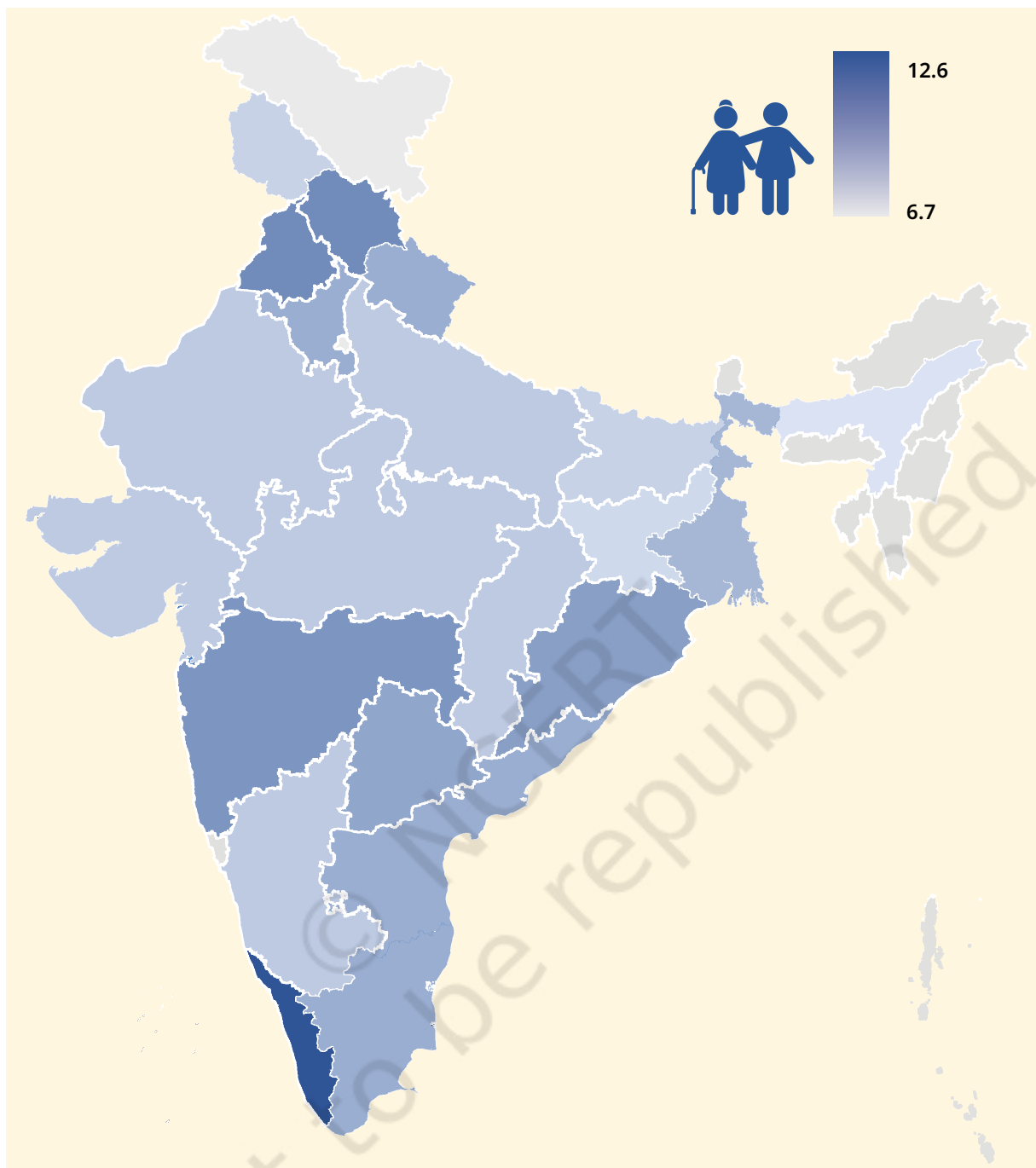


Fig. 6.19. Percentage share of the elderly population, India, 2011

healthcare facilities. When people retire, there are fewer workers to replace them, which can slow down the economy. Governments also face challenges paying **pensions** and providing services because of fewer young taxpayers.

Pension:
A regular payment made by the state to people of or above the official retirement age.



THINK ABOUT IT

Indian society has had the concept of *āshrama* dharma where life is divided into four phases — *brahmacharya*, *grihastāshrama*, *vānaprasta* and *sanyāsa*. Though older people begin to withdraw from economic activities, they continue to play other important roles — share their knowledge and wisdom with family and society as needed. Cultural continuity becomes possible through their guidance in rituals, storytelling, etc. They hold knowledge that may not necessarily be in books. Can you think of all the ways in which older people in your neighbourhood contribute to their family and society?

Productivity:

Measure of performance w.r.t. the amount of goods and services produced with a given quantity of inputs or resources

Nations need to prepare for the demographic transition. For developed countries, it is important to support an ageing society while maintaining **productivity** and innovation. For instance, Japan has raised the retirement age, and has employed technology and automation to compensate for labour shortages. There are large-scale community centres and robots and AI assistants to help care for older adults.

For developing countries, the challenge is to harness the demographic dividend through investment in good education, skilling and healthcare. At the same time, as societies develop and more women pursue formal jobs, they often face the ‘double burden’ — managing both job responsibilities and household duties. Lack of childcare facilities, joint family support system and flexible work hours can make it difficult for women to participate in workforce. Therefore, supportive family systems and childcare infrastructure like daycare centres can help the economy turn its demographic dividend into lasting progress. Policies in many nations have attempted to revive the fertility rate but have not been very successful so far.

Before we move on ...

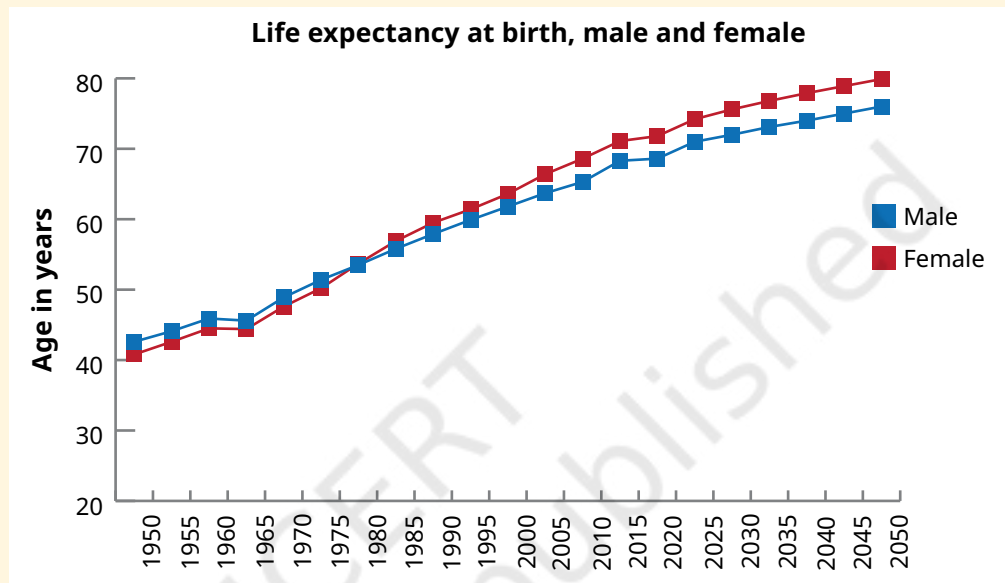


- Demography is the study of population size, structure, and changes due to births, deaths, and migration in a region.
- Population of a country changes over time and follows patterns called demographic transition, moving from high birth and death rates to low birth and death rates. Many developed countries around the world are experiencing shrinking and ageing population due to low birth rates.
- India currently has a large young workforce (demographic dividend), which can boost the country's growth through the development of human capital — education, employment, and healthcare. However, the window of opportunity is limited as India's population will begin to fall in the coming decades.

Questions and activities

1. Why is it important for a country to study its population through demography?
2. How can a low fertility rate affect a country's future economy and workforce?
3. Do you think a high birth rate is always good for a country? Why or why not?
4. Do you think it's better to have more people or fewer people in a country? What are the challenges countries face in the case of a fast-growing or shrinking population?
5. How does the age structure of a country affect the kind of jobs and services it needs? Explain with examples.
6. Why do you think families are generally getting smaller? Does having fewer children ensure better education and health for them? How does it affect families and society?

7. Observe the graph below showing changes in life expectancy across gender in India and answer the questions given below:
 - a) Has the life expectancy in India increased? If yes, what could be the reasons?
 - b) What was the life expectancy of males and females in 2010?



8. What is a demographic dividend, and how does it benefit a country? What do you think India needs to do today to make the most of its demographic dividend before 2050?
9. Choose two countries (for example: India and Japan, or Nigeria and Italy). Find out their:
 - Population size
 - Fertility rate
 - Life expectancy
 - Age distribution

How are they different? What might be the reasons behind these differences? For instance, find out how countries with ageing populations are managing this.

10. Imagine you are a researcher who intends to study migration patterns in your locality. Make a questionnaire to collect data on the following questions.

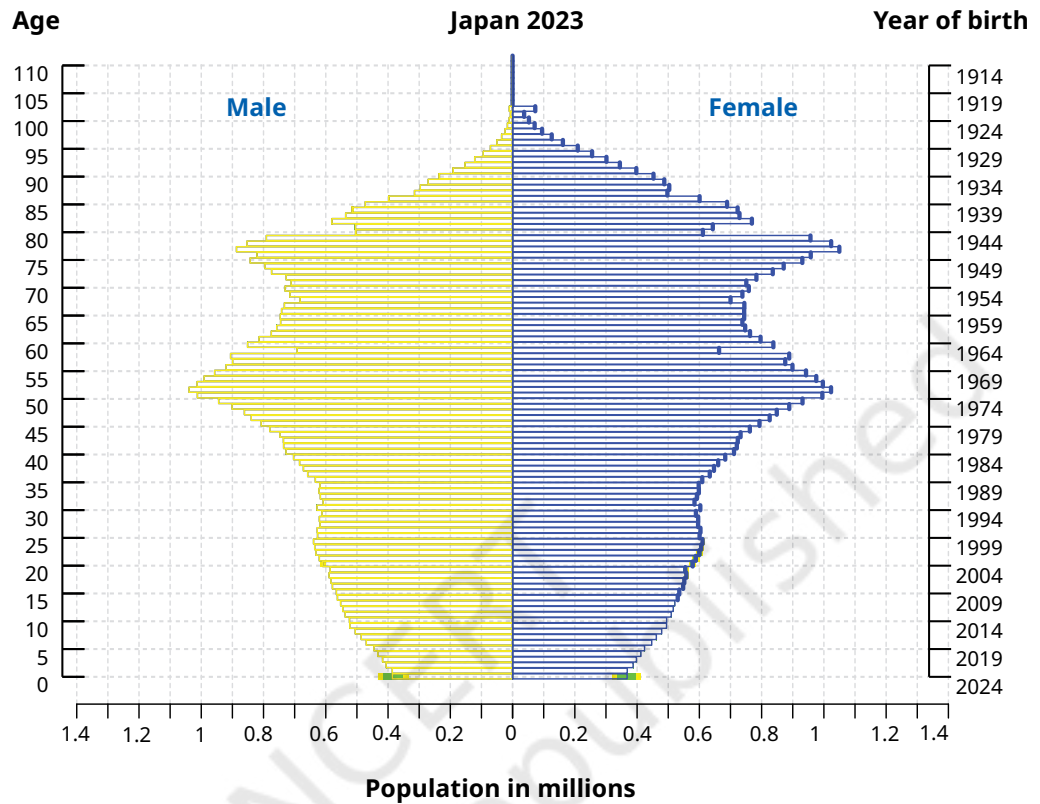
- Name of the person
- Age of the person
- Occupation of the person
- Place of residence
- Number of years lived in the place
- List the factors contributing to migration, such as lack of facilities, poor infrastructure, limited job opportunities and so on.

11. Draw a population pyramid on graph paper for India using the data given in the following table.

**Age-group-wise percentage distribution
of population (estimated for 2021)**

Age Group	Male	Female
0-4	8.6	8.2
5-9	8.9	8.4
10-14	8.7	8.6
15-19	9.3	9
20-24	9.5	9.1
25-29	9	8.6
30-34	8.1	8
35-39	7.1	7.4
40-44	6.3	6.7
45-49	5.7	6
50-54	5	5.2
55-59	4.2	4.2
60-64	3.2	3.3
65-69	2.4	2.7
70-74	1.8	2.1
75-79	1.2	1.4
80+	0.9	1.2

12. Observe the population pyramid for Japan in 2023 below. What can you infer from this? Write your observations and share in the class.



India's Urban Landscape

CHAPTER

7



Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.

— Jane Jacobs, American Urbanist



Fig. 7.1

The Big Questions ?

1. How do cities become the centre of diverse economic activities?
2. In what ways can urbanisation impact people's lives?
3. What kind of challenges do cities face in the 21st century?
4. How can effective urban planning improve life in cities?



INTRODUCTION

India has a rich urban legacy, from Harappan cities such as Dholavira, Kalibangan or Rakhigarhi to historical ones such as



Fig. 7.2. Dholavira: Spread over 48 ha with residential areas, fortifications, streets, complex water structures and large community grounds

Vijayanagara, Varanasi, Ujjain and many others, most of which are still flourishing today. You have visited these in the chapters of the theme ‘Tapestry of the Past’. Today, cities are areas that have a concentration of human populations, different kinds of businesses and occupations, government institutions, and often elaborate transportation and communication systems. These areas are also referred to as ‘urban’, and have elected local bodies responsible for the development of infrastructure and other amenities of the area.

Rural areas, on the other hand, consist of villages that usually have lower populations, close-knit communities, a larger number of agriculture-based occupations, fewer businesses, and generally, less elaborate transport and communication systems compared to cities. These areas are governed by gram panchayats, as you have read in the Grade 6 chapter, ‘Grassroots Democracy — Local Government in Rural Areas’. The exact definitions of cities and villages, as well as urban and rural, differ across the world. For instance, in Denmark, a place becomes urban if its population exceeds 220; in Japan, 50,000; and in India, 5,000.



LET'S EXPLORE

Where do you live? Is it a village, town or city? In what ways can you differentiate between urban and rural areas? Write your observations and share with your classmates.

POPULATION DENSITY IN CITIES

Imagine you invite a few friends for a get-together at your home; you will have plenty of space to move around. But if 30 people squeeze into the same space, it feels crowded, right?

This distribution of the number of people within a specific area reflects how densely or sparsely crowded a place is. So, experts known as **demographers**, assess the number of people living per unit of area, called population density. This is usually expressed as the number of people per square kilometre.

Population density = total population of a region / area of the region (in square km)



THINK ABOUT IT

Fig. 7.3 shows the **satellite view** of a village and a city in Haryana, respectively. The larger blocks of green and brown land on the left in the village show open areas, whereas the grey built-up area on the right shows a complex network of buildings. What can you infer about the population density of the two regions? Why do you think such a difference exists?

Demographer:

Individuals who study the characteristics of populations, such as size, age structure, geographic distribution, etc.

Satellite view:

A top-down view or visual data of the earth's surface captured by satellites orbiting the Earth.



Village Asadpur Khera, Jhajjar, Haryana



Gurugram city, Haryana

Fig. 7.3. Satellite images of a rural and an urban area in Haryana

World's Most Populous Cities in 2025

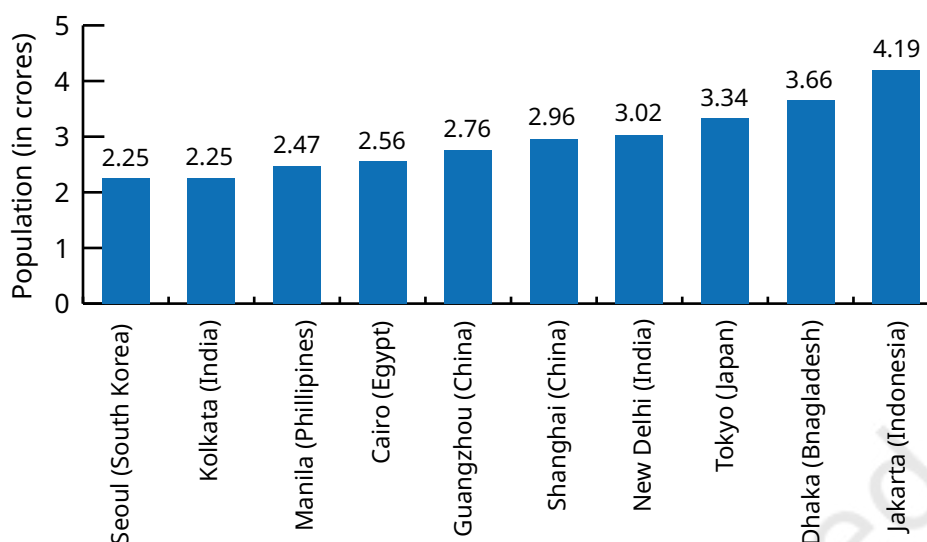


Fig. 7.4. Population of a few of the most populous cities in the world.
Two of the most populated cities are in India — Kolkata and New Delhi.

HOW DO CITIES BECOME CENTRES OF ECONOMIC ACTIVITIES?

Throughout history, we have seen places grow to become prominent urban centres through the advantages of location near rivers that afforded ease of transportation, at the crossroads of trade routes that facilitated the development of markets, as well as ease of access to agricultural produce and raw materials that supported the development of artisan communities and manufacturing. They became centres of economic activities as well as political and administrative power.

According to the United Nations' estimates, by 2050, 68 per cent of the world's population will be living in cities, compared to the 55 per cent now. A similar trend is expected in India, where the urban population has grown from 17 per cent in 1951 to around 40 per cent in 2025.



LET'S EXPLORE

- Observe and compare the two satellite images of an area of Bengaluru (Fig. 7.5). They are from 2012 and 2025, respectively. What are your observations? What has changed? Guess what might be the causes for the change.



Fig. 7.5. (a) Satellite view — Electronic City, Bengaluru (2012)



Fig. 7.5. (b) Satellite view — Electronic City, Bengaluru (2025)

- As a small group project, make a list of adults from different generations in and around your neighbourhood. Draft a questionnaire to enquire into their observations about their own village, town or city and how it has changed over the decades. What, in their view, are the key reasons that towns and cities have changed? If they have grown larger, what are the reasons for this? What do they miss about the 'old days' and what do they appreciate about the current time? Report on your project through a presentation to the class.

WHAT LEADS TO URBANISATION?

From villages to small towns to bustling megacities, areas and regions undergo a gradual transition from rural to urban.



Fig. 7.6. The process of urbanisation

Over time, cities can become crowded and expensive to live in, yet they offer social and economic value because of the concentration of diverse resources.

Sakchi was a small village in the Chota Nagpur Plateau when it was chosen as the site for Asia's first steel plant, due to its proximity to rich iron ore deposits. The vision of the Tata family was to develop the area into a township with modern facilities for all personnel working in the factory. Sir Dorabji Tata even built a hospital in the village long before steel production began. Sakchi grew from a small village into a bustling city and was renamed Jamshedpur in 1919. Today, it is the largest industrial city in Jharkhand. The city was designed with wide, tree-lined streets, gardens, open spaces, houses, and civic amenities. With its planned development, more factories emerged in the region, attracting people from within and outside the state for work opportunities.



Fig. 7.7. Tata Steel Plant at night, Jamshedpur



Fig. 7.8. Jamshedpur city

Just as Jamshedpur thrived on industries due to proximity to **natural resources**, cities often develop based on a **favourable geographical location**. Places near coastlines, rivers, or important trade routes tend to become economic hubs. For example, Mumbai's location along the Arabian Sea and Kolkata's nearness to the eastern coast made them vital port cities for domestic and international trade. Many cities today started off as large villages or small towns. Over time, their location and other factors drive their **urbanisation**.

Urbanisation: Population shift from rural to urban areas and the corresponding decrease in the proportion of people living in rural areas.



LET'S REMEMBER

What were the reasons that Surat became a textile manufacturing and diamond-cutting hub? (*Hint: Recall from your Grade 7 Chapter 'Understanding Markets'.*)

With the setting up of the Bombay Stock Exchange (BSE) in 1875, the port city of Mumbai became the financial capital of the nation. Trade and commerce expanded, and Mumbai became a hub where talent from all sections of society began to congregate. Exposure to what was happening around the world through the exchange of information and ideas led to innovation. The film industry started in the 1910s and was flourishing by the 1930s. Today, the city has a vast network of modern physical infrastructure which enables a wide range of economic activities.



Fig. 7.9. Taj Hotel (left), Gateway of India (right) are famous tourist attractions



Fig. 7.10. The Bandra Worli Sea Link bridge connecting western and southern Mumbai reduces traffic jams and eases mobility for commuters

Bengaluru, also known as the Silicon Valley of India, became an IT hub due to the concentration of software firms, new start-ups, and higher education institutions. **Specialised industries** grouped together in **clusters** turned it into a modern hub that offer jobs to skilled workers from different fields. A close link between industries and educational institutions encouraged innovation and led to development of new products and services using advanced technologies like Artificial Intelligence.



Fig. 7.11. Coastal Road (highway), Mumbai enables faster connectivity between areas



Fig. 7.12. The Bandra Kurla Complex, Mumbai, has banks, corporate offices, and financial institutions

Similarly, Hyderabad has grown into a major centre for technology-based enterprises.

While cities like Delhi, Mumbai, Bengaluru, and Chennai are large metropolises, there are smaller urban centres that are less populous with emerging economic and infrastructure development and specialise in certain industries. For example, Moradabad is famous for brass work, Ludhiana and Tirupur for textile production, Jaipur for handicrafts and gem jewellery, Channapatna for wooden toys, Kanchipuram for silk sarees, and so on. Other rapidly growing cities, such as Kochi, Indore, Lucknow, and Nagpur, are also lucrative for companies, as the cost of operations is lower than in larger cities. So, they establish warehouses and offices in these regions while serving customers across India, and globally.

Apart from industrial development, some cities hold historical and cultural significance, and are home to famous monuments. For example, Agra, with the Taj Mahal, attracts 70–80 lakh visitors



Fig. 7.13. A bazaar in Jaipur selling traditional Rajasthani embroidered clothes.



Fig. 7.14. A bustling market in Varanasi. A large variety of goods is sold here, and pilgrims visit to buy souvenirs and the famous Banarasi sarees.



Fig. 7.15. Selling flowers and other items for pūja outside a temple

Business Process Outsourcing (BPO):

A company hiring another service provider to do specific business functions or processes of their business. This reduces the costs for the hiring company and can get expert professionals to do their work.

every year. Other cities like Amritsar and Varanasi thrive on pilgrims visiting these sacred places. This drives economic activity in sectors such as transportation, hospitality, local food vending, handicrafts, and more, providing livelihoods to the people.

In the case of Delhi, the city has thrived as a centre of culture, trade and administration from the Iron Age. The Rajputs, Turks and Mughals built forts, roads, and markets, while the British built a new capital for their Indian empire and introduced railways and electricity. After Independence, New Delhi became the capital of the Indian Republic with many ministries, industries, universities, and research centres, attracting people for jobs and education opportunities from across the country.

As the population in Delhi expanded, it put pressure on infrastructure like housing, and water and sewerage systems. Creation of the National Capital Region (NCR) to include NOIDA (New Okhla Industrial Development Authority) and Ghaziabad, helped to ease the pressure. Better roads, highways, and the metro rail system boosted the region's expansion. Since the 1990s, Gurugram has become a major IT and **BPO (Business Process Outsourcing)** hub, drawing global companies and driving the development of housing and commercial spaces.



Fig. 7.16. (a) Rashtrapati Bhawan, New Delhi (L); (b) Bharat Mandapam, New Delhi (R)

CITIES AS CULTURAL HUBS

Cities draw people from various regions, they create a potpourri of culture, languages, customs, traditions, food, festivals, and so on, which begin to be shared along with shared spaces. For instance, *vaḍā pāv* is a famous snack from Mumbai where a Maharashtrian-style potato dumpling is placed delicately inside a *pāv* (where *pāo* or bread and potatoes are Portuguese). This easy-to-make, easy-to-carry, easy-to-eat snack became very popular among workers in Mumbai's textile mills.

Similarly, Kolkata was once the capital of British-ruled India; even today, it has many institutions from the era, like the Indian Museum and Victoria Memorial. However, it is also famous for the annual Durga Puja festivities. This five-day festival takes place every autumn, and Kolkata's Durga Puja was inscribed on UNESCO's list of Intangible Cultural Heritage of Humanity in 2021.

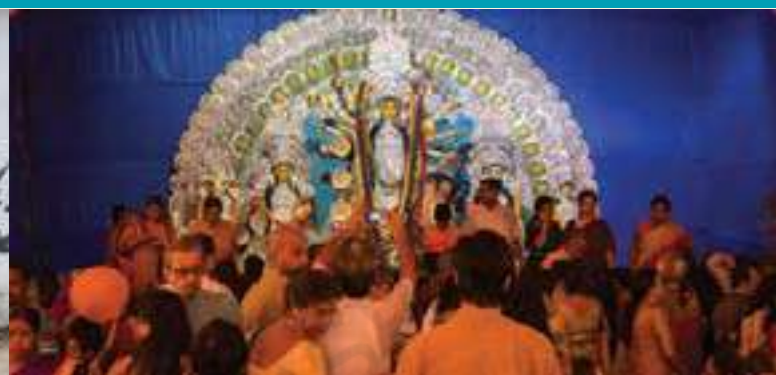
Cities also allocate resources to create other types of facilities — cultural centres, libraries, museums and sports stadiums — which become hubs for enrichment of socio-cultural aspects. Spaces are created for national and international gatherings for sharing knowledge and ideas. They give inhabitants new and exciting experiences and help them interact, build relationships, and form networks.



Indian Museum, Kolkata, West Bengal



Street art, Delhi



Durga Puja celebrations, Kolkata



Stadiums and their facilities



Interaction and networking among commuters



*Open-air music festival,
an event that connects people*



The Pradhanmantri Sangrahalay in New Delhi tells the story of the prime ministers of India and their contributions to national development. People from all walks of life visit here.

Fig. 7.17. Cities as cultural hubs

LET'S EXPLORE

Can you name some towns and cities near you? Find out some interesting traditions, cuisines, and customs specific to those areas, and discuss them in class.



CHALLENGES FACED BY CITIES

The influx of large populations into cities puts pressure on their resources, and increased demand for food, water, energy, housing, etc., strains infrastructure. Narrow and poorly maintained roads, the rapid development of unplanned residential areas with poor access to water, sanitation, energy, and waste management, a growing number of vehicles on the road, and rising temperatures on account of the creation of 'heat islands' are some of the problems that urban areas face. Pollution and waste are also on the rise. The National Capital Region (NCR), for example, frequently records **Air Quality Index (AQI)** levels over 400, far above the safe limit of 50, posing serious health risks to the residents. In addition, urban areas often experience higher crime rates than rural regions due to higher population density and economic inequality. This affects the safety and wellbeing of urban residents, and necessitates greater policing and law enforcement.

Air Quality Index:

Numerical scale used to report air quality. It includes data on various pollutants like particulate matter (PM2.5, PM10), carbon monoxide, sulfur dioxide, etc., into a single, easy-to-understand value. The higher the AQI, the greater the level of air pollution and the greater the risk to public health.



THINK ABOUT IT

Observe the pictures in Fig. 7.18. Do you notice the other side of the city? What could be the possible challenges faced by people living in urban slums?

Slums are overcrowded city settlements with poor housing and limited water, sanitation, and other municipal services. Slums generally grow near city's periphery, railway tracks, industrial areas where vacant land is available. This is due to lack of enough affordable housing for everyone migrating to the city. These are present in most countries worldwide. Slum dwellers often support cities by performing informal work — vegetable vending, domestic



Poor air quality



Water scarcity



Traffic jams



Reduced green spaces



Waste generation



Flooding during monsoons



Urban slums



Fig. 7.18. Some challenges faced by Indian cities

help, laundry services, construction work, plumbing, and so on. Improving housing, health, and education infrastructure for them is a key urban challenge. Many government schemes try to address the issue, such as the Pradhan Mantri Aawaas Yojana, which provides affordable housing to economically weaker households. Let us look at efforts to mitigate another urban challenge — water scarcity.

Power of collective action in the revival of Bengaluru lakes

Bengaluru, a modern metropolis, faces water shortages in summer and flooding during the monsoon season due to poor urban planning. Overuse of groundwater, lack of rainwater harvesting, and encroachment of lake beds have worsened the crisis. The city once had around 1,000 lakes, but rapid urbanisation reduced the number to about 200, many of which were polluted by sewage and chemicals; wells also dried up. Some lakes, like Bellandur and Varthur, got covered in foam, released toxic gases and even caught fire. Some efforts by non-profit organisations, Resident Welfare Associations (RWAs) and communities are reviving the lakes through desilting, repairing bunds with natural materials, clearing drainage channels, planting native plant species, and restocking fish. Such efforts can improve residents' quality of life by increasing water availability and maintaining the surrounding area's ecological balance.

Before development



After development



Fig. 7.19. Yelahanka Lake revival, Bengaluru

Urban planner:

A person who plans and designs how land in cities and towns is used, aiming to optimise infrastructure and the overall quality of life for residents.

PLANNING OUR CITIES

Cities need to be planned as dynamic systems with evolving needs to address these challenges, especially considering climate change. So, **urban planners** need to address many factors to improve the lives of the city's inhabitants. For example, how many people live there? What types of jobs do they have? What kind of transportation do they require, and how can it be interconnected for a smoother commute and access for everyone? Where would homes, businesses, parks, and public facilities (such as schools, hospitals, libraries, sports facilities, and cultural and community centres) be located? What kind of public safety provisions are required, such as safe streets for pedestrians and cyclists, fire stations and police stations in easy-to-reach places?

Let us look at a couple of examples of planned cities.

India's 'Pink City'

Vidyadhar Bhattacharya was the chief architect and urban planner of Jaipur, Rajasthan, appointed by Maharaja Sawai Jai Singh II to design a new city in 1727. Chosen for his knowledge and expertise in Indian architecture — *vāstu shāstra*, and *śhिल्पा shāstra*, he designed the city using a grid pattern, dividing it into rectangular blocks or *chowkris*, and considering the east-west and north-south cardinal directions. The city plans had wide streets, open spaces, gardens, and nine public squares. These



Fig. 7.20. Buildings made from locally available pink sandstone



Fig. 7.21. Panna Meena Kund, a stepwell

squares were centres of trade and interaction among people, and had important buildings and temples. For ensuring security, the city was enclosed by a 20-foot wall with seven gates. Keeping in mind the aesthetic appeal of the place, the buildings along major streets were built using pink sandstone, which gave them a uniform appearance and created a cohesive, holistic identity, and look and feel of the city. Hence, the city earned its name, the 'Pink City'. The design allowed good sunlight, fresh air, and a steady water supply through reservoirs and canals, keeping the local dry climate in mind. Markets were built with shaded porches for the comfort of traders and travellers. Even today, Jaipur works much as it was originally designed — a marvel of traditional planning, sustainability, and aesthetics.

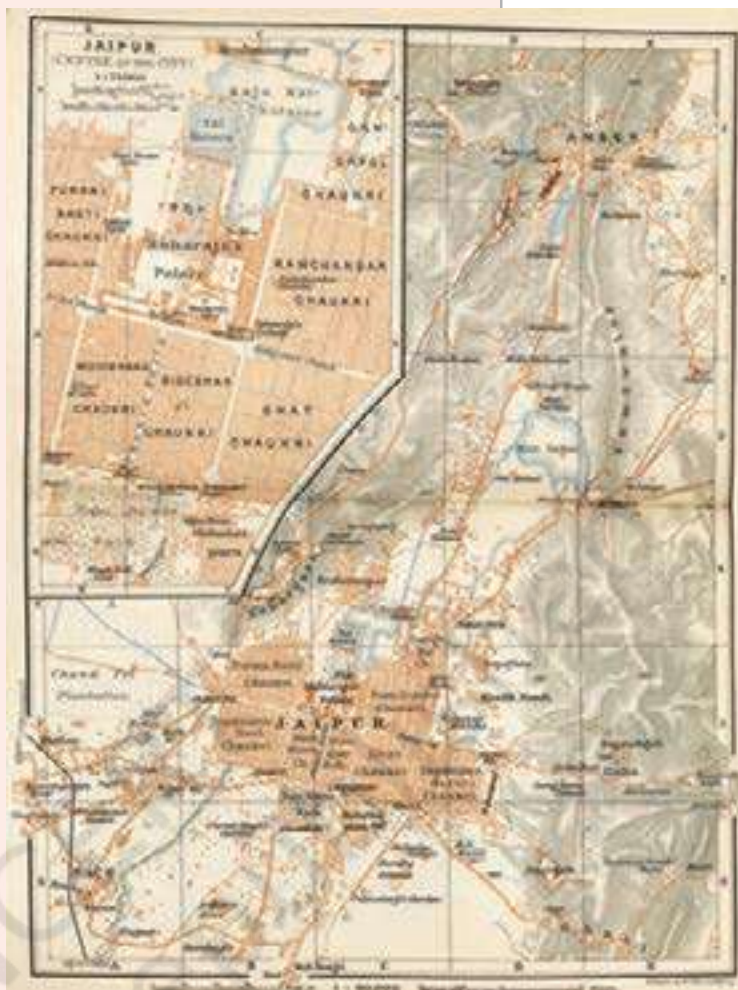


Fig. 7.22. Map of Jaipur, 1914

Dynamic urban planning of Singapore

Singapore, a small island nation with over 8,000 people per sq. km, is often seen as a model of urban planning. Despite its density, it has managed to grow while maintaining a high quality of life for the residents. The city has a Concept Plan for how the land must be used that looks up to 40 years ahead. The **Master Plan** is updated every 5 years to reflect the changing needs of the city's infrastructure, making the planning very flexible. From an overcrowded port in the 1960s, Singapore has transformed into a modern city-state with strong infrastructure in transport, electricity, water supply, and waste management.

Master Plan:

Long-term planning document that provides a conceptual layout to guide future growth and development.

Economic Life Around Us
7 - India's Urban Landscape

Vertical gardens:
A method of gardening that involves growing plants on vertical surfaces, such as walls, fences, or structures, instead of on the ground.



Fig. 7.23. Old (left) and new (right) Singapore

The city promotes mixed-use spaces where homes, offices, and recreational spaces like parks and museums exist nearby. Marina Bay Sands and Raffles Place (Fig. 7.24 and Fig. 7.25) are just a few kilometres apart.



Fig. 7.24. Marina Bay Sands — a leisure area having a museum, theatre, hotels, restaurants and gardens



Fig. 7.25. Raffles Place — a financial business district with banks and offices

The city's mass public transport system connects rail, buses, cycling paths, and green walking corridors for pedestrians that reduce reliance on cars, encourage walking and help create vibrant public places. To utilise the limited available land, Singapore developed sustainable high-rise buildings with rooftop and **vertical gardens**, earning the title of a 'garden city'. This is not only aesthetically pleasing but also reduces heat during summers and supports biodiversity.



Fig. 7.26. Mass Rapid Transit, a railway system connecting the main parts of the city



Fig. 7.27. Park connectors that link multiple parks; for the convenience of joggers, cyclists and pedestrians



Fig. 7.28. (Left) Buildings with vertical and terrace gardens (Right) Greenhouse Flower Dome that creates an all-weather space using sustainable technologies.

Singapore's urban planning promotes walkability and integrates residential housing for senior citizens with healthcare services, childcare facilities, diverse neighbourhoods, and green spaces. It serves as a model for intergenerational living and meeting diverse community needs within compact areas. Because of its community-centred design for interaction and social connections, Singapore is considered one of the **blue zone** cities where people have longer and healthier lives, focusing on overall wellbeing. Singapore remains a prime example of urban planning through which economic prosperity and a good quality of life is possible using innovative approaches.

Blue zones:

Some cities or regions where people live significantly longer, healthier lives — often reaching age 90 or even 100 — with low rates of chronic diseases like heart disease, cancer, and diabetes. For example, Okinawa in Japan.

Economic Life Around Us
7 - India's Urban Landscape

In India, several urban redevelopment projects have created vibrant public spaces. These require integrating technology, citizen participation, efficient infrastructure and improved urban services such as waste management, water supply, public transport, energy efficiency, housing, and e-governance. Ahmedabad's Sabarmati Riverfront is one such example that blends ecology and public utility. It features promenades, parks, markets, boating, and the Atal Bridge, which allows pedestrians and cyclists to walk along the river.



Two-level promenade for walking along the riverside



The Atal Bridge connecting the two sides of the river

Fig. 7.29. Sabarmati Riverfront, Ahmedabad, Gujarat

Similarly, Gangtok's Mahatma Gandhi Road is a central shopping hub and a pedestrian-only zone brimming with shops, restaurants, and hotels. It is also known for its cleanliness and vibrant atmosphere.



Fig. 7.30. M.G. Road, Gangtok, Sikkim

Cities are more than just clusters of buildings, roads, and markets — they are like living organisms that grow, adapt, and transform with time. They are centres of consumption as well as production, which are important aspects of economic growth. In addition, these are spaces where ideas are born, where traditions meet modernity, and where people from different walks of life come together to shape a shared future. A well-planned city not only provides infrastructure but also nurtures creativity, diversity, and community. This further needs to be complemented by innovative technologies using ICT (Information and Communication Technology), such as intelligent traffic systems, digital surveillance, online grievance redressal platforms, and solar-powered public spaces, to make urban life more convenient and sustainable.

Cities also remind us of our responsibilities. Rapid urbanisation brings challenges such as pollution, traffic congestion, inequality, and the loss of green spaces, affecting not only those who live in cities but also the rural areas connected to them. A sustainable city of tomorrow must balance growth with care for people and Nature. It must offer opportunities without excluding the vulnerable, and provide comfort without exhausting resources. As urban landscapes evolve and expand, balancing growth with sustainability will shape the cities of tomorrow.



Before we move on ...

- Cities are large human settlements that are centres of diverse economic and cultural activities. Many factors, such as locational advantage, the development of business clusters, tourism, and efficient infrastructure and so on, result in the growth of cities.
- As cities grow, they face many challenges such as air and water pollution, expansion of slums, lack of green spaces, traffic jams, and waste generation and so on.
- Cities need to be planned dynamically, keeping in mind the constantly changing needs of the inhabitants in a sustainable manner. With better planning, cities can remain centres of innovation, culture, and economic prosperity.

Questions and activities

1. What are some common features of cities?
2. Can you think of a city or town near you that has grown in population? What could be the underlying reasons for the urban migration?
3. With reference to the epigraph at the beginning of the chapter, who are the participants in the making of the city and what could be their contribution?
4. In what ways can urbanisation affect rural areas? Do cities also depend on rural areas? If yes, how? In what ways can rural and urban areas help each other develop?
5. What is urban planning? What are the risks of ignoring sustainable urban planning as cities expand into villages and forest areas?
6. Observe your own neighbourhood. What signs of good or poor planning do you notice? How do they affect daily life for you and others?
7. Imagine you are an urban planner, what are the things you would consider to plan a city? Do groups like children,

the elderly, and people with disabilities get easy access to parks, toilets, and public transport? What changes would you introduce to make it more inclusive?

8. Suppose your town, village or city has 100 people. Draw a rough map of the place on a graph paper. Imagine each square on the paper represents a specific area of the place, like residential neighbourhoods, parks, schools, factories, post offices and so on.

Now, distribute the 100 people throughout the area. You can decide where the people will live, whether they all live in the residential areas, or some live in the commercial or industrial areas. Write this number in each of the boxes.

In your depiction of the map, which areas are heavily populated and which are not? What were the reasons behind your choices of allocation of people?

9. Observe the satellite view of Mumbai and Gangtok, respectively. Find out their population density and likely reasons for the difference.

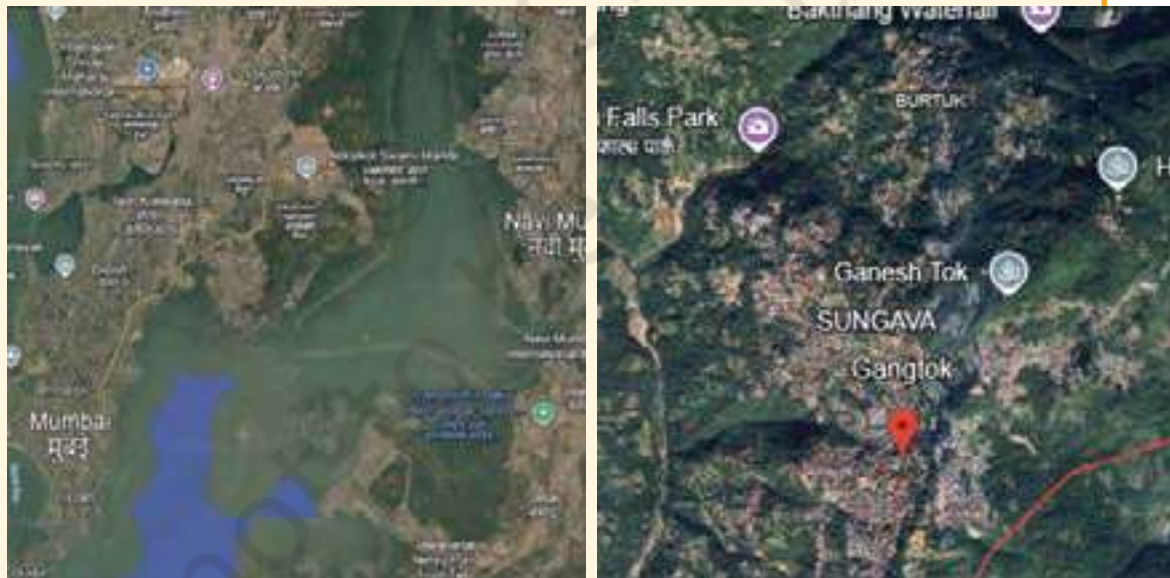


Fig. 7.31.

10. Find out how the city of Beijing, China, tackled the problem of air pollution. Prepare a report outlining measures that can be taken in India to mitigate air pollution in cities.

11. Talk to a family or community member who has moved from a village to a city. Ask them the reason for the same and their experience, challenges and opportunities. How does city life compare to rural life?
12. Learn about urban planning in other cities around the world. In what ways can some of those aspects be adapted for a city near you?
13. Explore and suggest action points with respect to urban planning in cities to mitigate the challenges below and write a report. Two have been completed for you.

Waste Management: Conducting a 'Segregate at Source' awareness drive in residential areas with demos on dry/wet waste disposal and composting.

Traffic congestion: carpooling, high taxes on vehicle purchase, etc.

Inadequate safety of residents

Poor mobility within the city

Expansion of slums

Heat waves during summers

14. Find out about a slum rehabilitation program where people moved from slums to proper housing in your city. What do you think its possible benefits could be for the communities there?

Chapter 8

Building Blocks in Economics: The Problem of Choice

The Big Questions

1. What does economics deal with?
2. What are the key questions in economics?
3. How do different economic systems address these questions?



If you had to choose, would you spend your pocket money on snacks or save it for a new pair of shoes? If your school library had only five copies of a new storybook but 20 students wanted to read it, who should get the book first? Can the students share them or should the school buy more copies? Which type of crop should a farmer grow based on the condition of the soil, rainfall, and **market** demand? Should an enterprise employ more labour or capital in the production process? Should the government spend more on building highways or hospitals?

These are not random questions; rather, these are examples of economic choices that individuals, enterprises, and governments have to make.

Some of our preferences are *needs*, such as essentials like food, water, and shelter, while others are *wants*, like gadgets, vacations, or luxury items. Human wants are unlimited and keep changing; for instance, people may want to upgrade from a bicycle to a motorbike and then to a car.

Market: A place where buying and selling of products and services takes place. It could be a physical market or a virtual one on the internet.

Needs



Wants



Fig. 8.1. Needs vs wants

LET'S EXPLORE



- List three things your parents bought this month. Can you classify them into needs or wants?
- Do you think having too many wants may create problems? Why or why not?

Choices and Limited Resources

Resources:

Factors used for the production of goods and services. These can be natural, like water and coal, or human-made, like capital and technology.



Medical equipment



Aircraft manufacturing



Refrigerator manufacturing

Fig. 8.2. Alternative uses of steel

Resources are required to satisfy human needs and wants. In Grade 8, you have learnt about factors of production—land, labour, capital, and technology—which are used for the production of goods and services. However, both natural and human-made resources are limited in quantity. They can be put to many alternative uses such as allocating money to buy fruit or a pair of shoes. Not just households, economies also have to decide how to use their scarce resources in the best possible way to meet unlimited wants and improve people's quality of life. For example, pictures in Fig. 8.2 show the alternative uses of steel.

When one alternative is chosen, the other options are given up. The value of what is given up is known as the **opportunity cost**. Let us understand this through an example. Imagine that a farmer has a piece of land and can choose to grow either barley or wheat on it. With limited land, water, and labour, the farmer must decide how much of each crop to produce. Consider the following table, which

shows various combinations of quantities of barley and wheat that can be grown by the farmer.

Combination	Barley (in kg)	Wheat (in kg)
A	0	100
B	25	90
C	50	70
D	75	40
E	100	0

When these combinations are plotted on a graph (Fig. 8.3), where the x-axis represents the quantity (in kg) of barley grown, and the y-axis represents the quantity (in kg) of wheat grown, a downward sloping curve is derived.

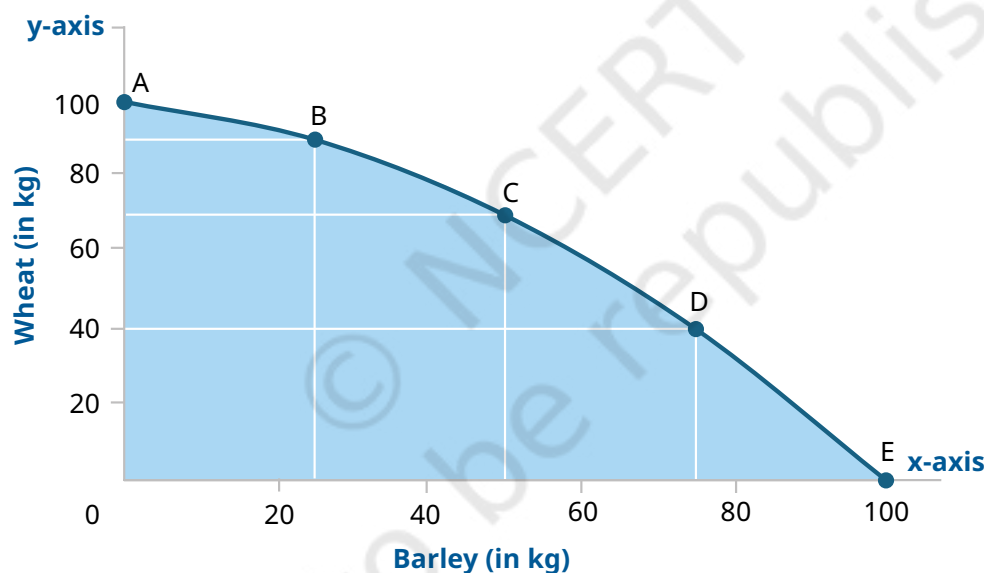


Fig. 8.3. Production Possibility Curve

This is called the **Production Possibility Curve (PPC)**, which shows the trade-off between barley and wheat produced. As the farmer moves from point A to E, they produce more barley and lesser wheat. However, to grow more barley, some wheat must be sacrificed—this is the opportunity cost of growing barley. All the points on the PPC show the maximum output that can be produced through efficient use of resources by avoiding wastage. This helps in better planning and decision-making by enterprises and the governments.

Production Possibility Curve (PPC):

The curve showing different combinations of goods that can be produced using all available resources.



LET'S EXPLORE

- Ask your parents about how they make choices for everyday purchase. What is the opportunity cost of making a particular decision?
- How do you decide to spend your time? Is time a scarce resource?

Economy:

The state of a country or region in terms of the production and consumption of goods and services, and the flow of money.

Economic entities:

One who participates in an economic activity, for example, producers, consumers, government, and enterprises.

Data:

Facts and statistics collected together for reference or analysis.

Surveys:

A systematic method for collecting and analysing data related to the economic conditions and behaviours of populations.

What does Economics Deal with?

The word **Economics** comes from the Greek word *oikonomia*, which in turn is composed of two words: *oikos*, which is usually translated as 'household'; and *nemein*, which is best translated as 'management'. So, economics refers to household management. In the case of limited resources and unlimited wants, not just families but also nations must plan how to use their resources efficiently.

Since resources have competing uses, individuals, enterprises, and governments must decide how to best allocate them, as these decisions affect the well-being of people and society as a whole. The discipline of Economics deals with how choices are made by optimising the use of limited resources to satisfy the needs and wants. It explains how different **economic entities**—consumers, producers, governments, and financial institutions—interact in an economy. For example, how people work and earn wages, how wealth and resources are distributed, how prices are determined in the market, how education and technology drive investment, and how government policies and trade influence prices in the market, employment, and so on.

However, good decisions rely on **data** and analysis, not guesswork. For example, families allocate their money for essential items (such as food, medicines, and school supplies), non-essential items (such as jewellery, entertainment, and restaurant meals) and savings. Governments use revenue from taxation to plan expenditure on infrastructure and welfare programmes. Enterprises study market trends and new innovations to better serve customers and maximise profits. Economists study the available alternatives, associated opportunity costs, and potential outcomes to help individuals, enterprises, and institutions make decisions. They use data from government reports such as economic **surveys** and financial statements of companies, and their analysis helps to understand the potential risks and opportunities. The scope of their work includes:

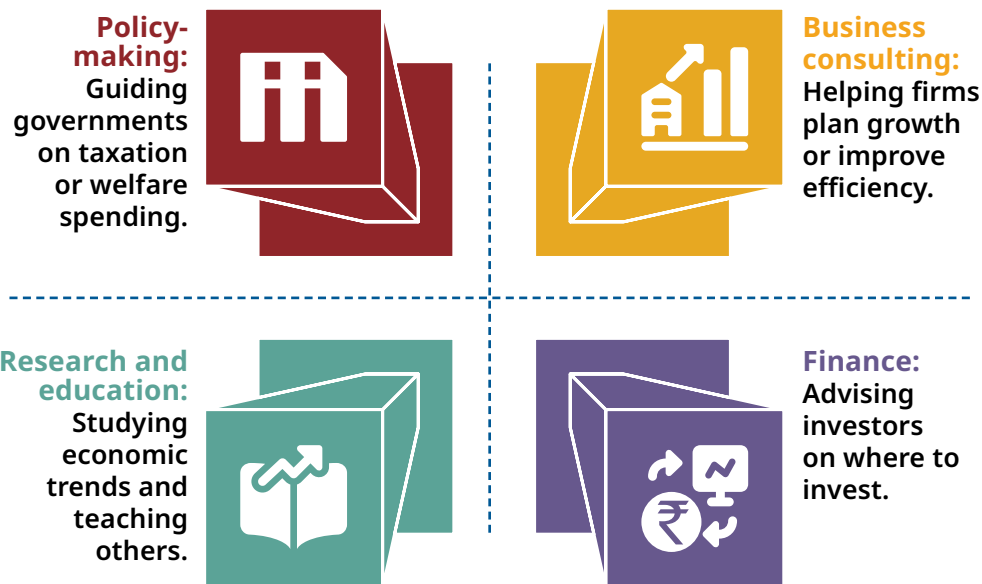
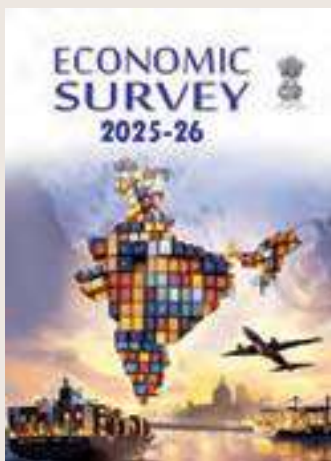


Fig. 8.4. Scope of work of Economists

Economic Survey: A Report on Indian Economy



The *Economic Survey of India* is an important annual document prepared by the Ministry of Finance and presented in Parliament before the Union Budget. It reviews the country's economic performance during the past year and analyses various sectors of the economy such as agriculture, industry, services, and other areas like employment, inflation, education, health, infrastructure, etc. It discusses future challenges and opportunities for the economy. This

helps people understand how the Indian economy is performing and what steps the government may take to improve growth and development. It also acts as a blueprint for the upcoming Union Budget by providing crucial insights for policymakers while making **policy**-related decisions. It is also useful for citizens as it explains economic data in a clear manner.

You can have a look at the latest economic survey at:

<https://www.indiabudget.gov.in/economicsurvey/>

Policy:

A course or principle of action adopted or proposed by organisations or individuals.

Key Questions in Economics

Any mismatch between unlimited wants and limited resources gives rise to three key questions that the discipline of economics seeks to address.

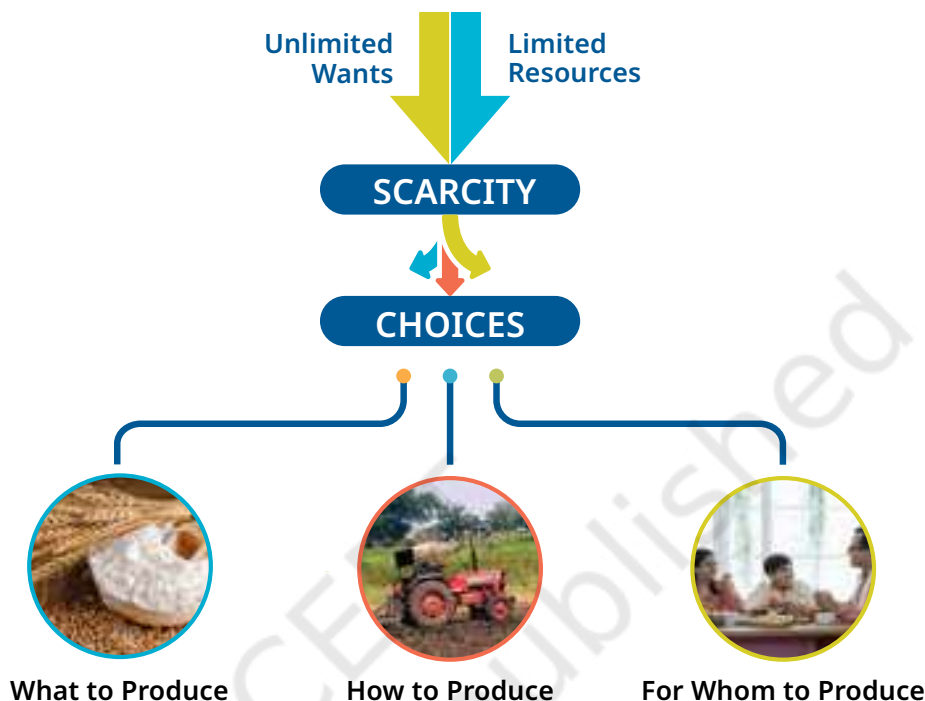


Fig. 8.5. Key questions that economics seeks to address

Economy:
System of production, distribution, trade, and consumption of goods and services within a specific area such as a country.

What to Produce and for Whom?

This fundamental question concerns which goods and services, and in what quantities, should be produced to meet the needs of the **economy** over a given period. For instance, should farmers produce water-intensive crops such as sugarcane and paddy, or drought-resistant crops such as millets and pulses? Producing sugarcane yields high profits and supports industries such as sugar, whereas producing millets and pulses saves water, improves soil health, and promotes sustainable agriculture. Here, the opportunity cost of producing sugarcane is the forgone gains from saved water and improved soil health. This type of decision reflects the trade-off between short-term economic gains and long-term sustainability by accounting for the opportunity costs of various alternatives. Similar trade-offs have to be made by companies, governments, and consumers.

The question of 'for whom to produce' delves into the purpose of goods and services produced, how they are produced and distributed, and who benefits from their production. Since resources are limited

and people have different needs, income levels, tastes, and lifestyles, producers decide which group of consumers they want to serve. For example, shoes are a common product, but different types of shoes are produced for different groups of people depending on their needs and purchasing power.

- School shoes are produced for students. They are usually simple in design, durable, and affordable.
- Office-wear shoes are made for working professionals. These shoes focus on comfort, formal appearance, and quality, often using leather or polished materials.
- Sports shoes are produced for athletes and fitness enthusiasts. They are designed using special rubber soles and lightweight materials to provide grip, flexibility, and support.
- Casual shoes or slippers are produced for daily use by people and need to be comfortable yet affordable.

The decision of ‘for whom to produce’ also affects the materials used. For instance, leather shoes are generally targeted at office-goers and high-income customers, whereas rubber or synthetic shoes are aimed at sports players, factory workers, or people who need affordable and durable footwear. Producers analyse what consumers like, how much money they have, and how much demand there is, before deciding what to make. This makes sure that limited resources are used well and not wasted.

THINK ABOUT IT

Should the government allocate more funds to healthcare and education or to defence and space exploration? Why or why not?



How to Produce?

After deciding what to produce, the next question is how to produce it—which methods, resources, and technologies should be used. For example, whether a manufacturer should automate processes or employ more labour for producing goods.

To answer this question, producers must select the right mix of factors of production—land, labour, capital, and technology. Production can be labour-intensive (using more workers and less machinery) or capital-intensive (using more machines and technology and less workers). Usually, economic activities related to agriculture and handicrafts rely more on labour, whereas industries such as steel and automobile manufacturing depend more on machinery.

8 – Building Blocks
in Economics:
The Problem of Choice

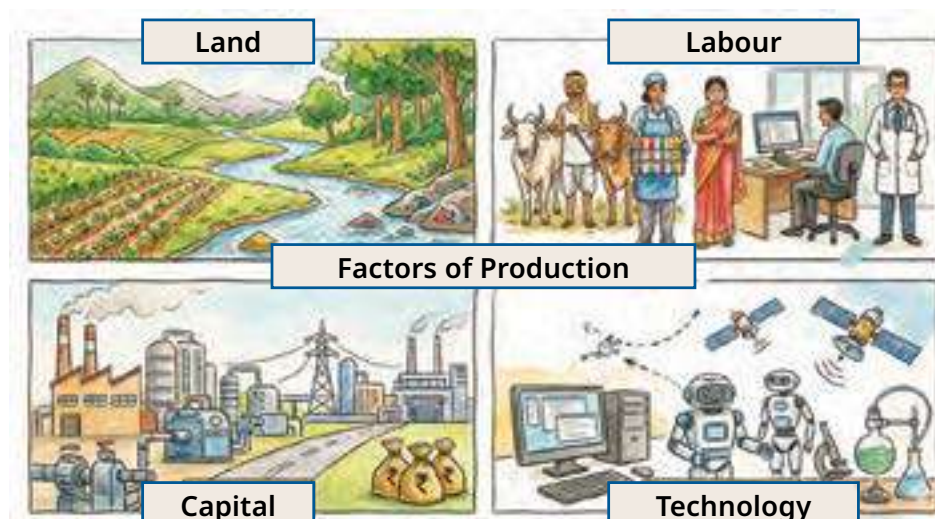


Fig. 8.6. Factors of production

However, the choice of the production technique employed depends on the cost of capital, choice of technology, and the nature of the product. The availability of various factors of production and their relative cost, and the laws as well as regulations in the country determine the decision by enterprises to address this key question. A garment manufacturer must choose between labour-intensive and capital-intensive methods of production. If machines are expensive, the firm will rely more on labour, but if machines become affordable, it may shift to automation. The choice also depends on the level of technology available—advanced technology encourages machine use, while limited technology leads to manual production. The nature of the product is important too, as customised or designer clothes require skilled labour, whereas mass-produced garments are better suited for machines. Additionally, if labour is cheap and easily available, labour-intensive methods are preferred, but if labour is costly or scarce, machines become more efficient. Government laws and regulations, such as labour laws or incentives for machinery, also influence this decision.

Economic Systems and How Choices are Made

In an economy, the answers to these three key questions depend on how the resources used to produce goods and services are organised and who controls the decision-making regarding them. The system that defines the mechanisms for the production, consumption, and distribution of goods, services, and resources is known as the economic system of a country.

The three kinds of economic systems are explained in the following pages.

Planned Economy

In a **planned economy**, a central planning authority of the government, such as the planning commission, makes all major economic decisions in the market, that is, what and how much will be produced, how they will be produced, and who will get to use them and at what prices. The government has ownership in most resources and sectors like land, factories, banks, and transport. With limited private ownership, enterprises usually follow the central authority's targets rather than market demand, and are heavily regulated by the government through strict permits and licenses to produce goods and services. However, this prevents a large number of enterprises to operate in the market and thus restricts competition among private enterprises. As a result, there is little motivation among enterprises to improve quality or innovate. Some examples of planned economies are the former Soviet Union, North Korea, and Cuba.

Market Economy

In a **market economy**, the questions of what, how, and how much to produce are addressed mainly by the forces of demand and supply with little government intervention. Often, the government acts like a referee in a football match. It ensures safety and law and order, and it does not control prices or production. The ownership of factories, shops, land, and other resources, largely rests with individuals and private companies. Many producers offer similar products, which encourages better quality, lower prices, and innovation in production of goods and services. Some of the prominent examples include the United States of America, Japan, and Hong Kong. However, governments play an important role even in these economies.

Planned economy:

An economic system in which the allocation of resources, and prices of goods and services are determined by the government.

Market economy:

An economic system in which the allocation of resources, and the prices of goods and services are determined primarily by market forces. The role of the government is to provide public goods and physical infrastructure.

LET'S EXPLORE

- In your opinion, should the government completely stay out of enterprise decisions?
- Can you think of an example where government action helped or harmed an industry or sector?

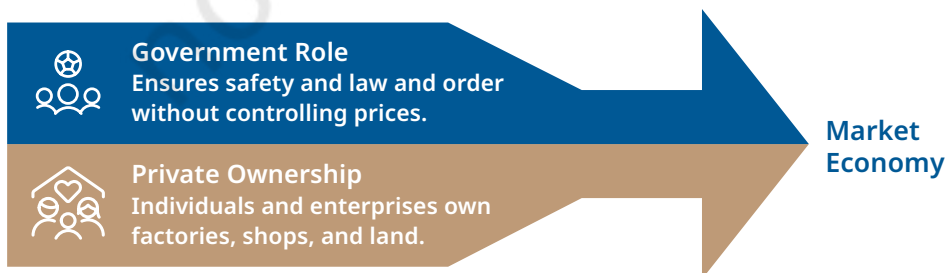


Fig. 8.7. Role of government and private ownership in a market economy

Mixed economy: The market system of resource allocation in which the government and private sector coexist and compete with each other in the market. The private players are regulated by the government. Almost all economies are mixed.

Public goods: Goods and services that are available to all individuals without anyone being excluded. The use of public goods by some people does not prevent others from using them—for example, parks, roads, police services, street lights, and basic education.

Mixed Economy

A **mixed economy** combines features of both market and planned economies. In this system, private individuals, enterprises, and the government play important roles in making economic choices and decisions. We also find large public sector companies that play a very important role in the market. In reality, most economies have features of mixed economic systems that allow the existence of private ownership, with some degree of government regulation.

A few examples of mixed economies include India (post-1991), China (post-1978), Germany, and Sweden. Even market economies like the United States of America and Singapore have significant government involvement in the market.

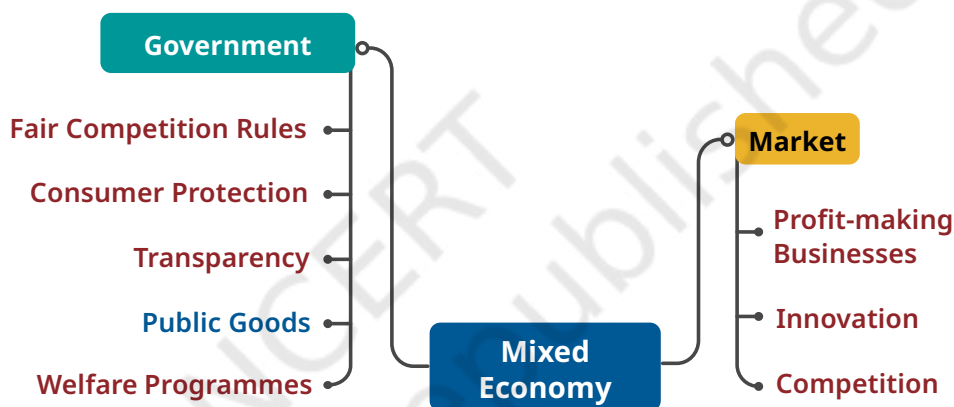


Fig. 8.8. The role of government and market in a mixed economy

DON'T MISS OUT

India's economic system has also evolved over time in response to changing needs and challenges. In the decades after Independence, India followed a more state-led approach similar to a planned economy. The government played a major role in controlling industries, allocating resources, and regulating production through licenses and permits, while many key sectors, such as banking, transport, and heavy industries were dominated by the public sector. However, by 1991 the country faced serious economic difficulties. As a result, the government introduced major economic reforms that reduced excessive regulations, encouraged private enterprise, opened the economy to global

trade and investment, and increased competition. These reforms gradually shifted India towards a more market-oriented system while still retaining an important role for the government. You will study more about these changes in your higher grades.



This chapter has shown that economics is essentially about making choices in a world of scarce resources and unlimited wants. Individuals, enterprises, and governments must constantly decide how to best use available resources, keeping in mind the opportunity cost of each decision. These choices are reflected in the three key economic questions—what to produce, how to produce, and for whom to produce. Different economic systems provide different ways of answering these questions, but most modern economies combine elements of both market and planned economic systems. Understanding these ideas helps us appreciate how everyday decisions, public policies, and economic systems together shape the production, distribution, and use of resources in an economy.

Before we move on...

- Economics deals with how individuals and societies make choices to use limited resources to satisfy unlimited wants. Every choice involves an opportunity cost—giving up one option for another.
- Every economy faces three central questions—what to produce, how to produce, and for whom to produce—to decide how best to use scarce resources.
- Different systems answer these questions differently: market economies rely on private decisions and demand and supply whereas, planned economies depend on government control, and mixed economies combine both.



Questions and activities

1. Why do you think people's wants keep changing over time? How does this affect production in an economy? Why cannot all our wants be satisfied?
2. 'Human wants are unlimited and keep changing'. How do you think this constant desire for more creates pressure on the environment? Can the fulfilment of wants and the extraction of resources be balanced?



3. Can you think of a resource in your region that is scarce but used wastefully? How could it be managed better?
4. Which economic system—market, planned, or mixed—do you think gives people the most freedom? Which economic system is best suited for promoting innovation? Why?
5. Critically examine why pure economic systems rarely exist in reality. Assess the limitations of such systems and justify why a mixed economy is often considered a more practical and effective approach in real-world contexts.
6. A student has ₹100 and must choose between buying a notebook or saving the money for buying a tennis racket later. Which economic concept best explains this situation?
 - a. Demand
 - b. Opportunity cost
 - c. Production
 - d. Inflation
7. How does understanding opportunity cost improve the quality of economic decision-making?
8. Can effective economic decisions be made without reliable data? Support your answer with an example.
9. Analyse how a country's present economic choices can shape its long-term future. Why is it important to consider future consequences while making economic decisions today?
10. Identify a news article from any newspaper of your choice about a product or commodity (such as vegetables, fruits, fuel, or electronics) where producers or companies are deciding how much to produce or supply. Write 2–3 sentences explaining the example you found and why the production decision was made.

Notes



Chapter 9

The Price Puzzle: What Drives the Market

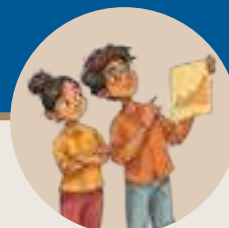
The Big Questions

1. *What are the factors that influence the demand for and supply of goods and services in a market?*
2. *How are prices of goods and services determined through demand and supply interactions?*
3. *What is market equilibrium, and does it exist in the real world?*
4. *How and why does the government intervene in the market?*

What happens if the mangoes your parents bought last week are now half the price? Why are vegetables expensive in the morning but are cheaper in the evening? Or why does the price of onions seem to change every few months? Why does the same flight seat cost ₹3,000 on one day but ₹9,000 on another day? Why do shops and malls announce discounts at certain times of the year? Have you ever wondered about the reasons behind these situations in a market?

In the Grade 7 chapter 'Understanding Markets', you learnt about the interaction among buyers and sellers and how prices adjust when the seller sets them too high or too low. Prices do not change randomly; they react to what people want, how much is available, the seasons, festivals, trends, and sometimes even rumours. Whether it is snacks, movie tickets, mobile phones, or vegetables, the prices of all goods and services are determined by two powerful forces constantly at work, that is, demand and supply.

This chapter explores the concepts of demand, supply, and price determination and provides a glimpse of the outcomes of their interplay in real-world situations.



0008C1400

Purchasing power:
It is a measure of how much one unit of a particular currency can buy at a particular time.

Demand

As the mango season approaches, the prices of mangoes are generally high, so people tend to buy them in smaller quantities. But when prices start falling, people prefer to buy larger quantities. *The quantity of a product that people are willing and able to buy at a particular price, depending on their needs, preferences, season, trend, and income, is called the demand for the product.* Demand is not just the desire to buy something; it is the willingness complemented by the ability or **purchasing power** to buy it.



Fig. 9.1. P= Price, Q= Quantity

As with mangoes, when the price of any product rises, the quantity demanded decreases, and when the price falls, the quantity demanded increases.

This phenomenon is called the **Law of**

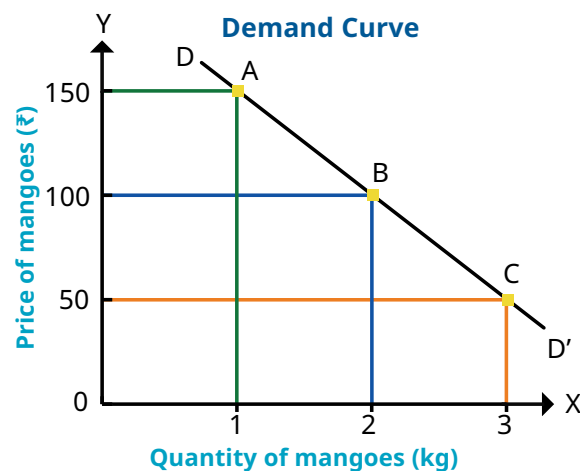
Demand, which highlights the inverse relationship between the price of a product or service and its quantity demanded.

Let us understand this with an example. At the beginning of the mango season, the price of mangoes was very high (₹150 per kg). Srivalli, a consumer, bought only 1 kg. As more mangoes became available in the market, over time, the price fell to ₹100, so she bought 2 kg, and later, when the price dropped to ₹50 per kg, she bought 3 kg. The quantity of a good or service that an individual consumer wants to buy at different prices, keeping other factors constant, is known as **individual demand**. For Srivalli, the individual demand is shown in the table below, which is also known as the 'demand schedule'. This demand schedule, when represented graphically, is called the 'demand curve'.

Demand Schedule

Price of mango per kg	Quantity demanded by Srivalli
₹ 150	1 kg
₹ 100	2 kg
₹ 50	3 kg

(a)



(b)

Fig. 9.2. Individual demand schedule (a) and Individual demand curve (b)

The y-axis in the Fig. 9.2 (b) represents the price of mangoes (in ₹), and the x-axis shows the quantity demanded of mangoes (in kg). Srivalli bought 1 kg of mangoes at ₹150 (represented at point A). As the price fell to ₹100 per kg, she bought 2 kg (at point B). But as the price fell to ₹50, she bought 3 kg (at point C). When the points of intersection, such as A, B, and C, are connected, the downward sloping line DD' is called the demand curve. The downward-sloping individual demand curve represents the inverse relationship between price and the quantity of a product demanded by the buyer, assuming other factors like income, taste, etc., to be constant.

What happens when others want to buy mangoes too? The total quantity of mangoes demanded by all potential buyers at different prices is known as **market demand**, that is, the sum of all individual demand. Let us consider two more consumers, Alex and Israt, whose individual demand is given in the schedule below:

Table 9.1. Individual and market demand schedule

Price	Q1 (Srivalli)	Q2 (Alex)	Q3 (Israt)	Market Demand (Q_D)
₹150	1 kg	2 kg	3 kg	6 kg
₹100	2 kg	4 kg	6 kg	12 kg
₹50	3 kg	6 kg	9 kg	18 kg

By summing the demand of all three consumers, $Q_1+Q_2+Q_3$, the market demand Q_D is derived. When the market demand is plotted at

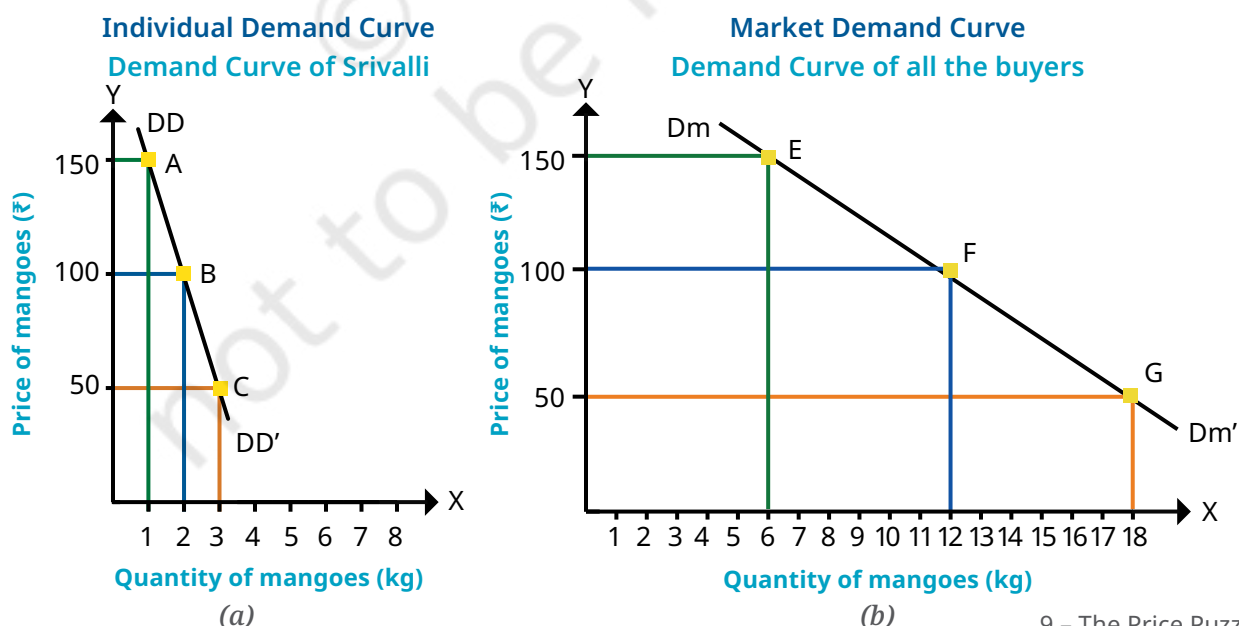


Fig. 9.3. Individual demand curve (a) and market demand curve (b)

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different prices, we get the market demand curve $D_m D_m'$ as shown in Fig. 9.3 (b).

DON'T MISS OUT

Did you notice that the market demand curve is flatter than Srivalli's individual demand curve? Why is that? Market demand aggregates many consumers, so the same price change creates a larger total quantity response. When the price falls from ₹150 to ₹50, Srivalli's demand increases by 2 kg, but market demand increases by 12 kg, making the market curve flatter and more responsive.



Other Determinants of Demand

When a new model of a popular smartphone is launched, long queues and pre-bookings indicate the rush to buy it, even if it is more expensive. So, the demand for a product does not necessarily change only because of price. Many other factors influence how much people want to buy, even when the price of the good or service remains the same. Let us see some of these factors at play.

Price of related goods

The demand for a good can be affected by changes in the prices of **related goods**. There are two types of related goods:

- a) **Substitute goods** – These goods can replace each other, like tea and coffee. If tea's price remains the same while coffee becomes more expensive, people who consume coffee may switch to tea, thereby increasing its demand. If Srivalli cannot afford to buy mangoes at the market price, she may buy bananas. When the price of a good rises, people tend to replace it with another relatively cheaper alternative. Hence, if the price of the substitute good increases, the demand for the other related good will increase.
- b) **Complementary goods** – These goods are generally used together to provide utility to the consumer, for instance, smartphones and earphones, or cars and petrol. If the demand for printers increases, the demand for printer cartridges may also rise, even though the price of cartridges remains unchanged. Similarly, if movie tickets become more expensive, people may refrain from going to the cinema, so demand for popcorn sold in cinema halls may also fall.

Related goods:
Products whose demand is interconnected, meaning a change in the price or availability of one directly affects the demand for the other.

Income of the consumer

When household income rises, consumers can afford to buy more or choose higher-quality products. A rise in income generally makes people feel more confident about their ability to spend, so the quantity demanded for several goods rises, even if prices remain the same.

Taste and preference of the buyer

Every consumer has specific tastes and preferences for certain products, which determine their demand. For example, Srivalli likes mangoes and cannot substitute them by oranges, even if oranges are cheaper than mangoes.

The demand also depends on the size and composition of the nation's population. For example, being the most populous nation, India's domestic consumer demand contributes to its economic growth. In addition, the population's composition shapes the demand for types of products and services. More children indicate increased demand for sports shoes, more working adults means a higher demand for formal shoes, and more elderly people imply a higher demand for comfortable or orthopaedic shoes.

THINK ABOUT IT

What happens when you consume the first mango? It tastes delicious, right? The second one is good? The third one and so on? You are barely interested in eating mangoes by this point. Why do you think this happens?

This is because the additional utility or usefulness derived from a product declines as more of it is consumed. This is known as the **diminishing marginal utility** principle in economics. As the utility derived from a successive quantity of products falls, the willingness to pay for the products also decreases, so demand falls.



Seasonality

Have you seen crowded bookshops at the beginning of the new academic session? Or customers flocking to sweet shops during the festive season? Or sweaters and jackets being demanded during the winter season? This is because individuals may demand different products at different times of the year, and these changes often depend on weather, festivals, and cultural habits rather than the price of the good.

Future price expectations

Future price expectations influence current demand even when current prices have not changed. If consumers expect prices to fall, they postpone purchases, decreasing present demand. If they expect prices to rise, they buy immediately, increasing present demand. For example, people delay buying durables before Diwali or the New Year, expecting festival discounts.

LET'S EXPLORE

- Create your own demand schedule for buying notebooks at different prices. At what price would you buy the most? At what price would you stop buying altogether? What could be the reason behind your choices?
- Ask your family members if they postponed or advanced buying any product because of future expectations of changes in price?



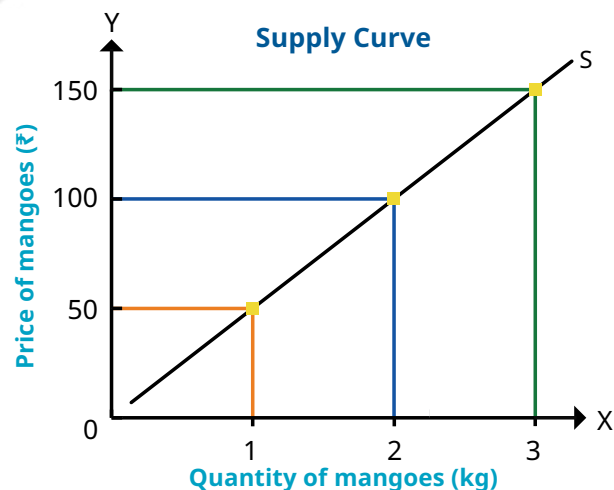
Supply

Supply is the quantity of a product that sellers are willing and able to offer at a particular price. As price increases, quantity supplied increases, and as price decreases, quantity supplied falls. This is because higher prices increase profitability, incentivising producers to increase output, and also attract new firms to the market. This is known as the law of supply. **Individual supply** is the quantity a particular seller offers at different prices.

Supply Schedule

Price of mango per kg	Qs by seller A
₹ 50	1 kg
₹ 100	2 kg
₹ 150	3 kg

(a)



(b)

Fig. 9.4. Individual supply schedule (a) and Individual supply curve (b)

At the start of mango season, supply is low, making mangoes costly. Mid-season, the supply increases and prices fall. This shows how prices depend on the interaction between demand and supply. When supply is less than demand, prices rise; when supply exceeds demand, prices fall.

Market supply is the sum of all individual supplies. For example, when mango prices are ₹50/kg, a seller supplies 1 kg; at ₹100/kg, he supplies 2 kg; at ₹150/kg, the seller supplies 3 kg. This pattern of higher prices leads to greater quantity supplied, which gives an upward-sloping supply curve as shown in Fig. 9.4.

Now consider three sellers, A, B, and C, in the market, who offer mangoes for sale in different quantities at different prices. So, their supply schedule is as follows:

Table 9.2. Supply schedule of sellers

Price	Seller A	Seller B	Seller C	Market supply (kg) (A+B+C=Q _s)
₹ 50	1	3	2	6
₹ 100	2	4	6	12
₹ 150	3	7	8	18

By combining the quantity supplied by all three sellers (A+B+C), the market supply Q_s is derived. By plotting the market supply with corresponding prices, the market supply curve is obtained.

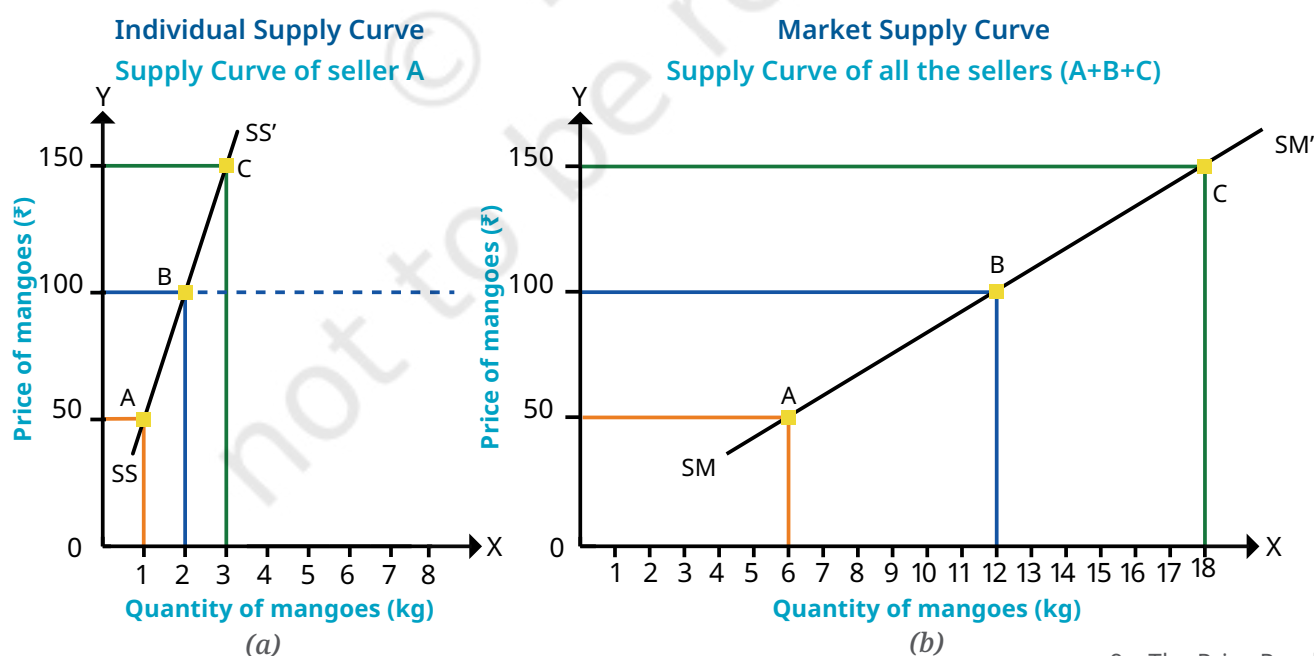


Fig. 9.5. Individual supply curve (a) and market supply curve (b)

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Fig. 9.6. Prices affecting supply decisions

Other Determinants of Supply

Price of related goods

Suppose a farmer faces two choices. If wheat prices are low but chickpea prices are high, he will grow more chickpeas in the next season. Therefore, the supply of one good depends on the profitability of other alternatives for the supplier.

Number of sellers in the market

If there are more sellers in a market due to higher competition and increased production, the market supply of the product would exceed the demand. As a result, prices would fall. Likewise, if there are fewer sellers in the market, supply would be lower than demand, and prices would rise.

Technology

Improvement in technology reduces the cost of production, allowing producers to produce more and supply more and vice versa. For example, with improved techniques such as drip irrigation and weather sensors, crop production may rise, leading to a higher supply. Similarly, the adoption of cold storage facilities in the transportation of mangoes to distant markets, thereby increasing market supply.

Future expectations

If producers or suppliers expect a boom in the demand for goods in the near future, they will produce more, and supply will rise. Similarly, if the producer is expecting lower demand, they will reduce production, leading to a fall in supply. For instance, if potato wholesalers expect prices to rise during the peak season, they might hold back supply now to sell later at higher prices.

LET'S EXPLORE

What happens to the supply of a product in case of a change in the cost of inputs, discovery of an alternate input, depletion of resources, change in weather, disaster, etc.? Discuss in class using examples of diverse goods and services.

Market equilibrium:

Market equilibrium is the point where supply of goods and services equals demand, meaning there is no excess supply (surplus) or excess demand (shortage) in the market, and prices tend to remain stable unless external factors change.

Market Equilibrium

Every market involves negotiation between what buyers are willing to pay and what sellers are willing to accept. Thus, prices are determined by the interaction between demand and supply.

The table below shows the quantities of mangoes demanded and supplied at the selected prices. At a lower price, there is excess demand, whereas at a higher price, there is excess supply.

Table 9.3

Price (₹)	Quantity demanded (Qd) of Mangoes (in kg)	Quantity supplied (Qs) of Mangoes (in kg)	Quantity Supplied and Quantity Demanded	Outcome
40	38	6	$Q_s < Q_d$	Excess Demand
100	12	12	$Q_s = Q_d$	Market Equilibrium
150	8	43	$Q_s > Q_d$	Excess Supply
Equilibrium Price = ₹ 100		Equilibrium Quantity = 12 kg		

At a price of ₹100, the quantity demanded equals the quantity supplied. This point is known as the **market equilibrium**. At this point, there is no pressure for prices to change, and the market is 'cleared', which means that there is neither a shortage (excess demand) nor a surplus (excess supply).

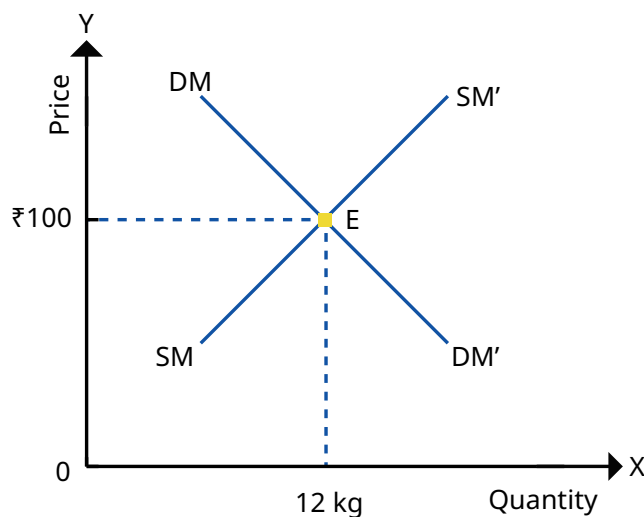


Fig. 9.7

On the graph in Fig. 9.7, equilibrium is where the demand curve DMDM' intersects the supply curve SMSM', that is, at point E, where the equilibrium price = ₹100 and the equilibrium quantity = 12 kg.

LET'S ANALYSE



Using data from Table 9.3, plot the demand and supply curve at the three prices, i.e., ₹40, ₹100, and ₹150. Identify and mark excess demand and supply on the graph. Think about how equilibrium could be reached in these scenarios.

Does Market Equilibrium Exist in the Real World?

In theory, equilibrium is an intersection point between demand and supply. But in the real world, markets are dynamic with constantly changing conditions. For example, changes in technology, wages, interest rates, as well as wars, political events, pandemics, weather, and natural disasters alter demand and supply. Therefore, 'equilibrium' in the real world is never stable and moves all the time, i.e., the market is always in a process of adjusting to a new equilibrium, never fully settling at the previous one. For example, during the COVID-19 pandemic in 2020, the demand for face masks surged rapidly. As a result, the supply could not catch up immediately, and the price of masks rose significantly. Over time, suppliers adjusted to the increased demand and prices fell. Once the pandemic was over, demand reduced further, and the prices reduced to pre-pandemic levels.

Tariffs by hotels: An example of dynamic markets

Hotels do not charge the same price (also called tariff) for rooms all the time. Their prices change according to demand, season, and special situations. This shows how markets are dynamic, meaning prices keep changing based on varying conditions.

Suppose a hotel in Goa has 100 rooms. The room tariff changes as follows:

- Off-season weekday (Monday in July): ₹1,500 per night
- Weekend during tourist season (Saturday in December): ₹8,000 per night
- New Year's Eve (very high demand): ₹25,000 per night

If a group tour cancels its booking, the hotel may reduce tariff by 40 per cent overnight to quickly fill empty rooms. Hotels may also change tariff several times in a day to earn maximum **revenue**. These tariff changes depend on other factors such as:

- How fast rooms are getting booked
- Tariff charged by nearby hotels
- Festivals, conferences, or events in the area
- Weather forecasts
- Number of days left before arrival
- Past booking trends

This example shows how prices in a market change with changes in demand and supply in real-world markets.



Revenue:

Total amount of money a business earns from the sale of goods or services, or other operating activities, before any expenses are deducted.

THINK ABOUT IT

Can you think of another real-life example (other than hotels) where prices change frequently? Explain why the prices keep changing.

Our choices today affect future resources. For example, high demand for fast fashion, overfishing and overuse of groundwater can harm future supply. So, should we focus only on short-term gains, or also think about long-term sustainability? How could this affect the market equilibrium?



Price ceiling:

An imposed price control that sets the maximum amount a seller can charge for a product or service.

Price floor:

An imposed limit on how low a price can be charged for a product, good, or service. For a price floor to be effective, it must be set above the market equilibrium price.

Monopoly:

A market structure with a single seller or producer controlling the entire supply of a unique product or service, facing no close substitutes, allowing them significant power to set prices and output.



Role of Government in the Economy

Today, India is the fourth-largest economy in the world. It is a market-based, regulated economy in which prices depend on demand and supply. However, markets do not always work fairly. Markets allocate goods and services based on willingness and ability to pay. Suppose essential goods like medicines become very expensive, will they be accessible to all? In such cases, fairness and equity in allocation are required, particularly to ensure the welfare of vulnerable and low-income groups.

So, the government plays an important role in the economy in the following key aspects.

Regulation of Unfair Practices

The government regulates unfair practices to protect consumers, workers, and producers from exploitation and injustice. For example, the government sets maximum prices (**price ceiling**) for essential goods like medicines to prevent overcharging. Similarly, the government sets a minimum wage to ensure workers earn enough for their hard work. This lower limit is known as the **price floor**.

Sometimes a single or a few sellers dominate the market; they can charge higher prices and supply less than a competitive market would. This form of **monopoly** would be detrimental to consumer welfare as it may charge higher prices, provide poorer quality of goods and services, restrict supply, and so on. The government regulates such practices by keeping the prices and quantity supplied in check.

THINK ABOUT IT

Have you ever seen or heard of the government fixing prices or wages (for example, bus fares, medicines, or minimum wages)? Share an example and why you think it was done.

Many regulators such as the Reserve Bank of India (RBI) for banking, the Central Consumer Protection Authority for violation of consumer rights and unfair trade practices, the Telecom Regulatory Authority of India (TRAI) for the telecommunications sector, the Securities and Exchange Board of India (SEBI) for the securities market, and so on, ensure transparency in the market. Do you remember some regulators from the Grade 7 Social Science textbook chapter 'Understanding Markets'?

During COVID-19, the demand for sanitisers surged, leading to stockouts and sharp price increases. Some shopkeepers began **hoarding** and **black-marketing**. The government intervened by declaring sanitisers essential commodities under the Essential Commodities Act, 1955, capping the maximum retail price at ₹100 for 200 ml bottles. Meanwhile, many companies started production, and sanitisers soon became widely available at fair prices. How do such price controls affect suppliers and consumers? While in this case the price control was for an emergency, do you think such controls should be in practice forever?

Provision of Public Goods

Public goods are goods and services that are provided by the government for the benefit of all citizens, for example, roads, bridges, public parks, and streetlighting are provided for public use; national defence protects the country from external threats; sanitation, and drainage systems improve living conditions, and so on. These goods are usually not provided by private companies because they do not generate direct profit.

Suppose your neighbourhood needs a park. Building it is expensive, but many families would benefit from it. If each family contributed ₹5,000, the park could be built. However, many families may think, “If others pay, the park will be built anyway, and I can use it without paying.” Because of this thinking, not enough money is collected, and the park is never built even though everyone needs it. This explains why goods that benefit everyone often require government provision or funding to ensure social welfare, economic development, and equal access to essential services.

LET'S EXPLORE

From your surroundings, list two goods or services that are provided by the government (for example: roads, streetlights, parks, police, and so on.). Choose one of the goods you listed and answer:

- Who does benefit from it?
- Why would it be difficult for a private company to provide this service on its own?
- Imagine the government stops providing this good or service, what problems might people in your area face?

Hoarding:

Accumulation of goods, commodities, or money by individuals, or firms beyond what is immediately necessary, typically driven by fear of future shortages, anticipated price increases, or speculative motives.

Black marketing:

The illegal trade of goods and services that are banned or regulated.



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Ease of doing business: How simple it is to start, run, and close a business in a country, measured by regulations, bureaucratic efficiency, and legal frameworks.



Limitations of Government Intervention

Although government regulations are required when markets are inefficient, they must be implemented carefully, as excessive government intervention can have adverse effects.

a) Price distortions and reduced producer incentives

When the government fixes prices below market levels, producers may lose motivation to supply goods or services. For instance, if the government sets a maximum price for wheat at ₹20 per kg while the market forces set it at ₹30 per kg, farmers receive less than what they would in a free market. This may lead to reduced production and shortages.

b) Compliance burdens

Government intervention often requires extensive regulations, licenses, permits, and compliance procedures. This can hurt businesses, especially small enterprises and hamper **ease of doing business**. For instance, a small restaurant may need multiple permissions related to food safety, fire safety, pollution control, and local clearances. The time and cost involved can discourage small entrepreneurs from starting or expanding businesses.

c) Discourages innovation and entrepreneurship

Heavy regulation and price controls reduce incentives to invest in new ideas or better technology. For example, in the case of price distortions, farmers won't invest in better seeds, irrigation, or technology, if they cannot earn adequate returns. This reduces long-term productivity and output.

LET'S RECALL

In the chapter 'Democracy', you have read that a democratic government is accountable to the people and is expected to act in their interest.

- According to you, how should a democratic government decide when and how much it should intervene in markets to protect people's welfare?
- Whose voices should a democratic government consider while making such decisions—consumers, producers, workers, or others? Why?

Understanding how these economic systems work and the general principles of economics help to see the logic behind the choices people make, whether it is the price they pay, the jobs they do, or the policies governments implement. It provides the tools to think critically, use resources wisely, and make informed decisions in a world where every choice affects individuals, society, and the economy.

Markets are not machines with fixed equilibria but dynamic systems that constantly adapt, evolve, and respond to changing conditions. The next time you notice a price change—whether it is books, vegetables, or sports equipment—pause and ask, what is really happening here? Is supply changing? Is demand shifting? Is the market moving toward equilibrium or being pushed away from it? Is government intervention helping or hurting? While understanding these forces, you are not merely learning key principles in economics; instead, you are decoding how market dynamics work in real life.

Before we move on...

- Demand is the quantity consumers are willing and able to buy at different prices. The Law of Demand shows an inverse relationship, that is, as price falls, quantity demanded rises. Demand is influenced by income, prices of substitutes and complements, tastes, seasonality, future expectations, and population.
- Supply is the quantity sellers are willing and able to offer at different prices. The Law of Supply shows a direct relationship—as price rises, quantity supplied increases. Supply depends on prices, related goods' prices, the number of sellers, technology, input costs, and other factors such as weather.
- Market equilibrium occurs when the quantity demanded equals quantity supplied. Fundamental markets constantly adjust toward a new equilibrium as conditions change—weather, trends, technology, income, and so on, create dynamic pricing conditions.
- Government intervenes when markets fail and produce unfair outcomes (unaffordable essentials), under-provide public goods, and enable monopolies. However, excessive government regulations may also have adverse effects.





Questions and activities

1. An increase in income always leads to a rise in demand for goods. Defend or refute, giving reasons for the same.
2. If petrol prices double, what happens to
 - a. Demand for diesel cars
 - b. Demand for electric cars
 - c. Demand for car accessories
 - d. Demand for public transport
3. A farmer traditionally irrigates fields manually (labour-intensive). He installs drip irrigation (a technology upgrade) that reduces water use by 40 per cent and increases yield by 30 per cent. How does this affect
 - a. His cost of production
 - b. His willingness to supply at different prices
 - c. The overall market supply if many farmers adopt this technology
4. During online festival sales, the prices of many products are very low. Use the concept of demand and supply to explain why the sellers sell at such a low price. What happens to the equilibrium when the price is lowered? Does this benefit only consumers or sellers as well? Explain.
5. Suppose the government sets a maximum sale price for an essential vaccine below the market-driven price. What is likely to happen? Choose from the options below and elucidate your point.

a. Surplus	b. Shortage
c. No effect	d. Fall in demand
6. The government levies higher taxes on products such as tobacco and alcohol to promote healthier choices among citizens. Can you find out other goods where price controls have been set in place? What are the reasons for the same?
7. Can excessive government regulation hurt markets? Explain with suitable examples.

8. In the table below, different prices of guava are given.
 - a. Think and write how much guava you will buy at each price.
 - b. Ask the same question to three of your friends and fill in the table.
 - c. Also make a graph for each one of you and one final graph for the total quantity.

Price	You	Friend 1	Friend 2	Friend 3	Total
₹100/kg					
₹80/kg					
₹50/kg					
₹20/kg					

9. Visit the nearby vegetable market and try to find answers to the following questions.
 - a. Who decides the prices of different vegetables in the vegetable market?
 - b. Sometimes the prices of a few vegetables is too high, and sometimes too low. Why is this?
 - c. The price of tomatoes is high in the morning and eventually gets lower by the evening. Have you ever noticed this? Comment.
10. Categorise the following combination of goods into substitute goods and complementary goods.
 - a. Movie ticket in the cinema hall and popcorn
 - b. Eraser and pencil
 - c. Laptop and computer
 - d. Air Conditioner and cooler
 - e. Notebook and pen
 - f. Apple and banana
 - g. Mobile and earphones

11. Fig. 9.8 shows the demand curve DD' and Supply curve SS'. Based on the figure, answer the following questions:

- What does point E represent in this market?
- What is the equilibrium price and equilibrium quantity at point E?
- Point A lies on DD'. Point B lies on SS'. What do the points A and B indicate about demand and supply? What does the gap between A and B (both on the upper dashed price line) represent?
- Point F lies on DD'. Point C lies on SS'. What do the points F and C indicate about demand and supply? What does the gap between C and F (both on the lower dashed price line) represent?
- If the price stays at the lower dashed line, what could happen next in a free market?

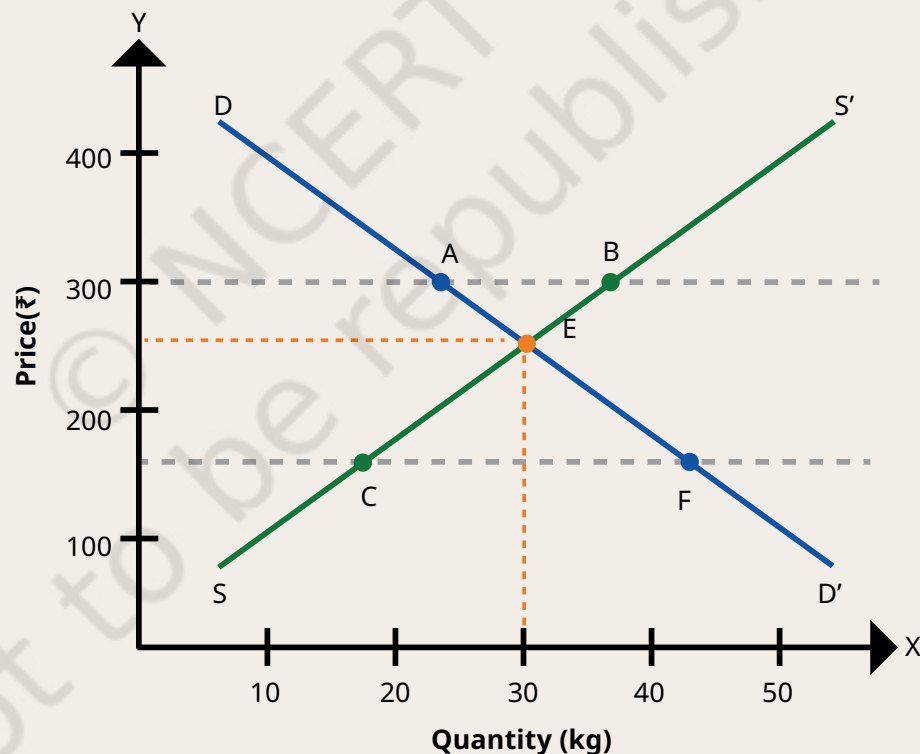


Fig. 9.8

12. Draw a market equilibrium graph using the following demand schedule.

Price (₹)	10	20	30	40	50
Q.D. (kg)	5	10	15	20	25
Q.S. (kg)	25	20	15	10	5

- Plot the demand and supply curve using the above data.
- Identify the equilibrium price and quantity.
- Observe the above data and analyse what happens if the price is set at ₹20 or ₹40.

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